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May Build Pulp and Paper Mills in Alaska

Final Permits by the Federal Power Commission are Likely to Be Granted the Zellerbach Interests and San Francisco Chronicle and Los Angeles Times Early in 1930—All Engineers Reports Made During the Past Two Years to the Paper Interests at Cost of Approximately $200,000 Are Complete

SAN FRANCISCO, Cal., Jan. 6, 1930—Federal Power Commission's final permits, making possible the establishement of paper and pulp mills in Alaska by the Zellerbach interests, the *San Francisco Chronicle* and the *Los Angeles Times,* are likely to be granted the early part of 1930, if power, timber and hydraulic surveys in preparation since 1927 are approved by Alaskan representatives of the United States Forest Service, who are now en route to San Francisco according to the Financial Bureau of the *Wall Street Journal.*

All engineers' reports, based on surveys made during the past two years at a cost of approximately $200,000 to the paper interests, are reported complete.

No announcement is expected to be made by either the Zellerbach, Cameron or Chandler interests regarding the size, location, or time of construction of paper mills until the final federal permits are received.

Site Near Juneau Considered

The Cameron interests are said to have been seriously considering the acquisition of an idle ore mill, suitable for a paper mill site, at Thane, Alaska, a few miles from Juneau. This property is owned by the Alaska Gold Mines Company. The Thane townsite now has improvements, such as buildings and docks, and the recent discovery of a new lake near Taku Inlet has made additional power available.

When questioned as to the possible use of the Thane townsite for a pulp mill, J. R. Dillon, treasurer of the Alaska Gold Mines Company stated that coast interests had considered these properties, but no plans had materialized.

Since the summer of 1927, representatives of the Crown-Zellerbach Corp. and the two newspapers have been actively investigating the possibilities of Alaskan timber and power resources.

Preliminary Grants Made

In June, 1927, two preliminary power permits were granted by the Federal Power Commission on power streams in southeastern Alaska, Permit 755 on Long and Crater lakes near Juneau to G. T. Cameron, owner of the *San Francisco Chronicle,* and Permit 758 on several streams on Revilla Island, near Ketchikan to I. Zellerbach. The grantees were to have two years to complete their preliminary studies. In June, 1929, this time was extended one year more to June 16, 1930.

Under the regulations set up by the federal government, it was necessary for each of these permittees to bid for certain tracts of timber, set aside for each group of powers. The terms of the pulp timber awards, aggregating more than $10,000,000 for 10,000,000,000 board feet of Alaskan hemlock and spruce, provide that a paper mill with a minimum capacity of 200 tons daily must be completed before April 1, 1932, which by 1942 must be increased to a 400-ton minimum capacity.

Because of the nature of the necessary preliminary investigations, the two interests found it convenient to conduct these engineering power and timber surveys jointly.

Submarine Cable Is Involved

For the past three summers, forest engineers have been conducting field investigations, and "cruisers" have been covering hundreds of miles of virgin country for the purpose of securing reliable estimates of the amount of pulp which the Alaskan forests may be expected to yield.

Hydraulic engineers have been making studies of the power situation held under both permits, and accurate and continuous records have been kept of the daily flow of each stream where projected hydro-electric plants may be located. Exploratory work has been done in connection with locating possible routes for transmission lines to connect the various power plants with the mills.

Topographic surveys have been made for the purpose of determining the most economical type of development at each power site, and a proposed route for a submarine cable across Taku inlet, near Juneau, has been planned and laid out for the Cameron interests.

Niagara-Hudson Power Control

[FROM OUR REGULAR CORRESPONDENT]

WATERTOWN, N. Y., January 4, 1930.—At a meeting of officials of the Niagara-Hudson Power Corporation before a special legislative commission this week it was revealed by Floyd L. Carlisle, chairman of the board, that control of the organization is vested in four principal groups. The Carlisle, or St. Regis Paper holdings, amount to 18.1 per cent of the total stock outstanding after deducting inter-company holdings; the Morgan group owns 14.4 per cent, the Schoelkopf holdings total 15 per cent and the stock held by the Aluminum Company of America amounts to 10.7 per cent. The three largest holdings total only 47.5 per cent or less than a majority while the four groups together own 58.2 per cent of the stock. It was also brought out that there are 78,000 stockholders of the company, each of whose holdings amount to less than 50,000 shares. The total stock outstanding is 25,102,351 shares.

Paper Mill Operations Gain in Pennsylvania

Manufacturers of Standard Grades to Maintain Present Schedule During Next Few Weeks—Fine Paper Plants Active With Heavy Demand For Better Grades—Lower Grades of Fine Paper In Only Moderate Request—Specialty Business Satisfactory

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., January 6, 1930.—Occupied with the completion of inventory, the trade has not yet completed recording business or stocks for the old year. In nearly all the large wrapping paper and specialty houses sales of paper for December were slightly above the holiday season of 1928. The mills, too, have the situation well in hand, as no offerings of consequence have been made to the dealers so far this year. Now that the trade is preparing to go ahead with plans for the new year, the mills in the local territory are gaining in operations although there is room for improvement. Orders to date are for a few weeks ahead and will maintain the present schedule for from two to four weeks. There is little full time operation except where contract orders are effective and where business keeps steady throughout the term of the bulk contract. This is applied to fine paper manufacturers with large printing and publishing house business or where writing papers are shipped under volume orders. There has been little demand for cheaper grades in the fine paper group but the better class of unfinished and coated grades and cover papers and higher class writings are in fair demand.

Those dealers with a well developed specialty trade are enjoying good business in comparison to the quieter trend in the market as a whole. Wrapping papers are listless and mill buying is restricted to the needs of the immediate future. Boards are quiet as are roofing papers and builders supplies. The cold weather of December curtailed the demand for building papers, roofings and felts. The paper board markets still continue to wage a highly competitive warfare as the manufacturers vie with one another to obtain orders in volume sufficient to keep operations at profitable levels throughout the early weeks of the new year. Corrugated products, too, are quieter as the inventory season concentrates on stock recording requirements and the holiday rush is over. There was a good demand for fibre and corrugated products throughout the holidays and this buying reduced stocks carried from last spring which were laggards in the autumn.

A few of the better grades of paper stock are moving but the cheaper lines are dull with little mill attention given to buying for the expected resumption of operations that will follow the inventory season. The values are intact and continue at the low levels of the last six months. Rags, too, are listless, and await more active interests on the part of manufacturers.

Paper Merchants, Inc., Makes Debut

Under the title of the Paper Merchants, Inc., the old established fine paper house of Riegel & Co., Inc. made its debut to the Philadelphia trade with its personnel changed under the reorganization effective at this time last year. The firm has an extensive paper sales and warehouse at 140 North 6th street and is one of the largest fine paper houses in this section. Last January the company reorganized after the retirement of the former head of the firm George Riegel and continued to conduct its business with Arthur B. Sherrill, of the old concern, its vice president. With the change in name and the revision of controlling interest to former employees and executives of the company, Vice President Sherrill retires from the concern to devote himself to other interests. Under the new title of the Paper Merchants, Inc., the officials of the company are: President, Edward McCorkendale; Treasurer, Winfield Predmore and Secretary, R. L. McCall. These members of the firm, with the exception of Mr. Predmore, were former employees of the old concern. It was announced last Fall of the plans of Vice President Sherrill to retire from the business after the first of the new year. Since the change of controlling interest became effective there has been added to the fine papers carried several new lines. The business will continue along the old established program with expansions in mill representations as the new owners make progress.

Schwartz & Co. Now Commercial Paper Co.

With the new year, Schwartz & Company, 151 North 3rd street becomes the Commercial Paper Company and with the change in title business name other expansions are announced. The firm will continue its business history under its founder and head of the concern, Samuel Schwartz, who has been engaged in wrapping paper, specialty, bag and twine dealing for more than twelve years. A year ago the business was removed to its present location with a view to expanding in the large five story quarters. After settlement in the new home, there was added a line of sanitary products, drinking cups and towels. These have been augmented by the addition of stationery products such as flat papers, typewriter papers, blottings, and other commercial stationery supplies. In the coming year new specialties will be added from time to time as further expansion requires.

Trade Banquets In New Year

Two important banquets have been arranged for the new year. These annual affairs bring together in social contact two groups of paper merchants in the supply trades. The annual Graphics Arts Night, which has been held for the past decade or so will unite in the ties of friendly association at the banquet board the paper merchants linked with the fine paper division of the industry, consumers in the printing and publishing crafts, and the supplies branch of the allied trades. The Graphics Art Night is sponsored by the Philadelphia Paper Trade Association and its allied organization, the Typothetae of Philadelphia. There was held last week a meeting of the Typothetae Committee, with William A. Meeks its manager presiding, for the purpose of arranging a date and the appointment of a chairman to supervise the annual affair. The committee selected March 6 as the date and the place this year will be the Benjamin Franklin Hotel, instead of the Penn Athletic Club, which has been the center of previous social gatherings of the allied trades. Paul Seidel, of the Royal Electrotype Company, has been appointed chairman of the entertainment committee and will appoint the paper trade associates of the committee and those to represent the master printers body.

Silver Jubilee For Wholesale Waste Merchants

This year the annual gathering of the Wholesale Waste Merchants Association of Philadelphia will be a Silver Jubilee in celebration of the 25th anniversary of the organization of the wholesale stock men who formerly were organized as the Philadelphia Paper Stock Dealers Association and from which sprang the present organization that includes all branches of the waste industry. Either February or early March will be selected for the annual affair the committee now being engaged in setting a date although the Penn Athletic Club has definitely been decided upon as the place. This year there will be an unusually elaborate program arranged to commemorate the quarter century celebration. The group and trade associates from all parts of the country in both the mail and waste trades will be invited to join in marking its arrival at the 25th milestone. The committee in charge of arrangements is George B. French, Castle & Overton.

Philadelphia office; William L. Simmons, Jr., John Simmons Sons; Dominic De Santi, Alexander De Santi & Co.; Charles McNichol, P. DeSante & Co. and William J. McGarity, of the Penn Paper and Stock Company.

Garret Buchanan Co., Receives Radio Applause

Following its entertaining broadcasting program on Christmas Eve, the Garrett-Buchanan Company, 12-20 South 6th street, has been highly complimented on its appropriate greeting to the public and to date has received more than six hundred letters from admirers who heard the Yuletide celebration over the radio. The program was featured with a noted mixed quartette in which the two hundred employees of the firm joined in singing Carols over Station WCAU. In his greeting to the public, President Morgan H. Thomas, of the Garrett-Buchanan Company, gave the following address and greeting to the air audience:—

"It is our annual custom on the day before Christmas to have a party, with singing by our quartette and employees. Because of the many favorable comments last year, we are again broadcasting this entertainment and hope our many friends and customers are enjoying it with us. We have also as our guests today the officers and employees of the Van Reed Paper Company, of Reading, a well known and old established house which we have recently purchased in its entirety, our object being to give our customers in Reading and vicinity better service and to make Reading a real paper centre in that district. We invite the public to visit our offices and warehouses at either 12 to 20 South 6th street, Philadelphia or Reed and Elm streets, Reading, Pa. and see what a first class equipment we have for selling 'Everything in Paper and Twine.'

"We wish you all at this time a very Merry Christmas and a Happy New Year."

Downingtown Paper Co.'s Financial Transfer

A notice has been given to holders of the first mortgage sinking fund six per cent gold bonds of the Downingtown Paper Company, controlled here by the head of the J. Gibson McIlvain Company, lumber dealers, of the transfer of said bonds to the City Bank-Farmer's Trust Company, the Trust Division of the National City Bank of New York under the changes effective in the merger of the National City Bank with the Farmer's Trust Company of the metropolis. Under the transfer of these bonds to the Trust Division, the National City Bank retires as trustee of the under indenture dated March 1, 1926, made by the Downingtown Paper Company, with mills at Downingtown, Pa., and controlled by a company of which J. Gibson McIlvain is head. The Board of Directors of the Downingtown Paper Company in formal notice to the holders of the bonds accepts the resignation of the Trustee as represented by the National City Company so as to permit the transfer of the bonds to its merged Trust Division as a matter of legal routine. The Downingtown Paper Company is the former Frank B. Miller Paper Company, which was acquired several years ago by the local lumber company head, and is operated as a paper board mill. No changes are effected in the financial transfer which is merely a legal requirement made under the banking merger.

U. S. Envelope Co. In Control Of Lititz Mill

The former plant of the Consumers Box Board and Paper Company, at Lititz, Pa., has been acquired by the U. S. Envelope Company, of Springfield, Mass. and is now being operated as tissue manufacturing headquarters for the Morgan Tissue Paper Division, a subsidiary of the Massachusetts concern. The mill has been subjected to renovations that has brought it up to date for the production of tissues used by the U. S. Envelope Company in its various plants scattered throughout the United States, including its Philadelphia factories. The Lititz, Pa., mills are being supervised by Robert J. Black, who is manager of the Morgan Division. The Consumer Box Board and Paper Company, was formerly operated by a company of which H. J. Peirson was president and general manager; C. B. Risser, treasurer and J. F. Stoner, secretary. It has equipment for the manufacture of tissues with two 86 inch cylinders with widest trim of 75 inches. The equipment will be augmented under the new owners with a view to meeting the needs for fancy linings and box finishings for the U. S. Envelope Company.

Baltimore Waste Paper House Acquires New Quarters

Following a fire which destroyed its former warehouses and offices, the Thomas H. O'Conner Company, one of the oldest waste paper houses in the south, under management of a former Philadelphia associate, Lisle Owen, former manager of the Hemingway Paper Company, has acquired new quarters at 2108-26 Boston street, in the Oriole City, for its waste paper plant. The plant will be used to house the business which was formerly located in Guilford avenue where a disastrous fire in December wrecked the building, caused the death of four women occupants of the structure and injured fifteen others. Lisle Owen who long was identified with the Hemingway Company as its manager here previous to the sale to the present owner Harry Bailey, is now linked with the membership of the firm of the O'Connor Company. As a result of the fire the Fire Board of Baltimore is to present an ordinance to be enacted by City Councils limiting the height of waste paper storage buildings to not more than two stories because of the inflammable nature of the waste to be stored and the quickness with which flames spread in structures used for this purpose.

Valentine Predicts Good Year for Paper Mills

[FROM OUR REGULAR CORRESPONDENT]

WATERTOWN, N. Y., January 4, 1930.—Increased industrial activity for this section and a good year for paper manufacturers are predicted in 1930 by industrial leaders in statements issued during the past week. C. W. Valentine, president of the Bagley & Sewall Company, is optimistic over the outlook for the coming year and in a brief statement said that business during 1929 had been very satisfactory.

"While the paper mills are feeling to some extent an over-expansion in certain directions there is considerable evidence that the paper market is catching up to this condition," he said. "Undoubtedly there will not be a great number of new developments but paper mills are recognizing the need of improving their equipment which means reconditioning paper machines by introducing many of the improvements in equipment which have been developed in the past few years." He also said that the Bagley & Sewall Company has never had better orders than has been the case in recent months while orders on the books and prospects indicate that the operation of the entire plant will be fully up to normal throughout the year of 1930.

Northern New York is particularly fortunate in that it produces nothing but staple goods, according to Robert J. Buck, prominent financier of this city. "The paper mills that are running on specialties, which are all that we have now, seem to be doing as well as they have for some time past. Our manufacturers of paper mill machinery are also operating at normal rate and I do not hear of any prospective slump in these lines. So far as I can judge from my association with the local industrial interests it is my opinion that 1930 ought to be a normal year for industries operating in this territory."

Rising Paper Co. Makes Improvements

[FROM OUR REGULAR CORRESPONDENT]

HOUSATONIC, Mass., January 7, 1930.—An addition is to be built to the machine room of the Rising Paper Company and a coal conveyor is now being installed. These are a part of a number of improvements that have been inaugurated to bring the plant up to date which has included also the construction of other and modern buildings, the construction of a 175 foot chimney made necessary by additional boiler equipment and the erection of a new 10 room house for the superintendent.

Ontario Mills Little Affected by Holidays

Fine Paper Manufacturers Well Employed, With Persistent Demand for Various Standard Grades From Consumers—Book Paper Plants Busy Again Following Slight Curtailment of Production—Writing, Bond and Ledger Paper Machines Active

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, ONT., January 6, 1930.—For the second time within the past couple of months the board manufacturers, with a view to stabilizing the industry, together with prices in the paper box industry, have readjusted their prices. Effective on January 1 a new price list came into effect indicating slightly increased prices on chip and news grade board, while the list also shows decreases on certain grades of patent coated. These rearrangements of prices, it is pointed out, are in line with the cost of production and the condition of the market which, in some lines of board, has been affected by quotations on importations. The board industry as a whole has been enjoying a fair volume of business although operating on a reduced schedule in order that all the mills may get a portion of the total business. There was a slackening down during the holiday season but the new year has opened up quite well with a good demand for most lines.

Corrugated board manufacturers have had considerable outside competition to meet, but all branches of the industry are better organized to meet adverse conditions now and it is believed that the board mills are about to enter on a period of moderate prosperity. There is, of course, a lull in the paper box manufacturing trade but there are indications that the new year is going to show an early revival of sales volume and most of the manufacturers are preparing for it both in the folding and set-up departments, while corrugated containers also have a bright outlook.

In the paper box trade generally there was a smart revival of business just before Christmas—business that should have come earlier—but which was deferred on account of conditions created by the stock market situation. There was a splendid sale of fancy boxes for holiday purposes, the larger department stores in Toronto sending out practically all of their goods in boxes lined with fancy paper, while there was also a tremendous sale of papeteries.

With many of the paper consuming sources taking stock preparatory to showing inventory on annual statements the wholesale paper trade is inclined to be somewhat quiet, small orders being in evidence. Enough of these are being booked, however, to make a fair showing and it is expected that the year will show an early revival of quantity buying. The wholesale paper houses have had their more or less quiet periods but most of the firms express satisfaction with the volume of business done during 1929, although increases have not been recorded in all cases. The printing industry slackened off towards the end of the year and the volume of business from that source was rather disappointing although the year as a whole for the printing trade was fairly good, furnishing as it did, an outlet for an amount of paper slightly greater than that of last year. At the moment fine papers are not in good demand although a certain amount is selling all the time Until inventory time is over no great selling movement in fine papers may be expected.

Manufacturing activities in the Ontario paper mills were little affected by the holiday season. Fine paper manufacturers are well employed and there is little difficulty in disposing of tonnages being turned out. Book paper mills, which were feeling the pinch a bit a few weeks ago on account of the diminution in orders for future delivery, are now busy again and are booking orders for delivery in the early months of the present year, and with the prospect of well-sustained business as the year progresses. Writing, bond, ledger and envelope paper machines are all quite busy and have been little disturbed by the holiday festivities. Light weight paper mills are busy, with a good record of sales at the end of 1929 and with prospects for 1930 as bright as they were at this season last year. The entire year was a good one with the light weight paper manufacturers, their industry being one of the most prosperous in the Ontario paper trade.

Converting lines are moving only moderately well, the envelope manufacturing department being somewhat inactive but with good prospects for an early revival this fall. The coarse paper market is none too busy either from a manufacturing or a distributing standpoint and it would appear as if there was still room for co-operation, particularly in the paper bag department, with a view to stabilizing the market generally for coarse paper lines. There is a good call for all waste lines, rag and paper, although winter conditions have interfered materially with collections by firms supplying the paper mills.

In pulp circles there is a fairly active market. One of the surprising come backs of 1929 has been the recovery of the market for ground wood which occurred towards the close of the old year. It is pointed out that this has not been the result of increased consumption, but rather the necessary decrease in grinding because water has been low in a number of power streams in the United States. In consequence of this there has been an increased demand on Canadian producers and several mills that have been shut down may resume operations. It is recognized that the present acute situation is probably temporary, but it does give a chance for some mills that have been running short to increase production and idle mills that have wood on hand can convert it into cash. Canadian producers are hoping that the demand from the States will continue. A keen observer of water conditions was heard to remark the other day that Canadian rivers will not be as full as usual this winter, so it would seem that the price of mechanical pulp will hold firm throughout most of the winter.

Pulp Industry Weathers Critical Period

A conference will be called by Hon. Charles Stewart, Minister of the Interior, of representatives of the Provinces of the Dominion to consider protection against forest fires. Mr. Stewart, in a statement issued at the end of the old year, said the fight against fires in 1929, when the fire hazard was exceedingly high and the number of fires unprecedented, had been so successful as to warrant the belief that "efforts can be made adequate to cope with forest fires under all conditions, provided the necessary public support is assured." An increase of 15 per cent in news print production last year as compared with 1929 is estimated in the statement which reviews the entire forestry situation. The report continues: "Over one-third of the land area of Canada is suitable only for timber production, but unless the averages of fire are substantially reduced, there is certainly a very grave danger that the vast industries dependent upon wood will be faced with a serious shortage of raw materials. The situation is aggravated by destructive methods of exploitation, which not only operated without thought of a second thought, but, by leaving enormous areas of undisposed slash, intensify the fire hazard, and in many cases give rise to conditions under which fire-control under abnormally dry periods is well night an impossibility. Certainly the whole question of forest fire protection is one with which Canada must cope much more effectively than in the past, and to permit of proper review of the situation it is my intention to call a conference with the provinces on this matter early in 1930.

The Pulp and Paper Industry in Canada

The pulp and paper industry successfully weathered a most

critical year. The drastic reduction in the price of news print, which for a time threatened the prosperity of the industry, was counteracted by courageous co-operation, and no branch of the industry was seriously affected. In fact, the news print mills were operated at about 85 per cent of their capacity, as compared with 82 per cent in 1928 and it is expected that the total production will show an increase of over 15 per cent as compared with the previous year. Employment has been maintained in the woods and in the mills with little, if any, reduction in wages.

There has been a considerable decrease in the exportation of pulpwood, although pulpwood exports still constitute a serious drain on pulpwood supplies. There has also been a slight decrease in the amount of pulp exported, but this has been far outweighed by the increase of over 15 per cent in the exports of news print, which comprises the bulk of our exports of paper. In spite of the reduction in price the exports of pulp and paper show an increase of from $6,000,000 to $7,000,000.

It is of interest to note that this increase occurred not only in our trade with the United States, but that other countries of the Empire, notably the United Kingdom and Australia, increased their purchases of Canadian paper by between 60 and 70 per cent. Canada has further increased her lead among the countries of the world as a producer of news print. Whereas in 1928 the production of Canadian mills exceeded that of the United States by 67 per cent, last year the Canadian production was 90 per cent greater than that of her neighbor.

Forest Fires are Severe

Viewing Canada as a whole, the fire season of 1929 was, perhaps, the most severe ever experienced in the annals of this country. With the exception of the Provinces of Quebec and New Brunswick, situations of extreme gravity prevailed for extended periods, in some cases unbroken from spring to late fall. Western Ontario and the northern parts of Manitoba and Saskatchewan were the most affected by adverse conditions. The fire season of the previous year, instead of dying down normally in the fall, extended right through till late December. The winter's snowfall was extremely light and the whole Northern area dried up in April and remained in a parched condition until November. In Alberta and British Columbia the period of high fire hazard developed only during the summer months, but reached extreme severity during August and early September.

Trying to Reopen Fort William Mill

Declaring his willingness to co-operate with a Fort William delegation seeking to end the shut-down of the Fort William Paper Company's mill, Premier Fergueson last week telegraphed to L. R. Wilson, of Montreal, vice-president and managing director of the Abitibi Power and Paper Company, of which the Fort William concern is a subsidiary. The deputation, headed by Dr. R. J. Manion, M.P. for Fort William, left this week to visit Mr. Wilson. The premier's telegram, it is stated, was sent by way of smoothing the way for the visitors. The latter urged upon Mr. Wilson that the plant's closing a few weeks ago aggravated the local unemployment situation that was already acute. Dr. Manion was accompanied by Frank H. Spence, M. P. for Fort William, and N. B. Darrell, the city's mayor. They called first in Toronto on the Hon. William Finlayson, Minister of Lands and Forests. The Fort William mill, it was learned, was affected by the present adverse situation in the news print business which is said to be suffering from over-production. It is a large mill, producing daily at a capacity of 175 tons of news print, 160 tons of ground wood and 75 tons of sulphite.

Notes and Jottings of the Trade

The technical department of the Howard Smith Paper Mills, Ltd., has been moved to a newly fitted building on Guy street, Montreal, where complete laboratories are being installed. George H. Tomlinson, technical director of the company, is in general charge, with Gordon Irving, until recently of the Department of Cellulose Chemistry, McGill University, in immediate charge of laboratory work.

The Smart-Turner Machine Company, Ltd., Hamilton, Ont., have the sole right to manufacture in Canada what is known as the Wood Trash Pump, which embodies the type of impeller designed and patented by A. B. Wood, of New Orleans. These pumps are built especially for pumping unscreened trash of all descriptions, such as sewage, wood pulp and in dredging work, and other purposes.

The death took place suddenly while on his way to work at the Interlake Tissue Mills at Merritton, Ont., a few days ago, of E. McGrath. Mr. McGrath, who worked in the crepe department of the mill, had been a worker in paper mills for over sixty years, starting at Georgetown, Ont.

Heavy damage was caused by a fire which broke out in the plant of the Davis Paper Box Company, in Vancouver, B. C., a few days ago. Three firemen were injured in fighting the blaze. While the fire was confined to the second and third floors, stock on the main floor was badly damaged. The total loss was not stated by the company.

Directors of the Interlake Tissue Mills, Ltd., with mills at Merritton, Ont., and head office at Toronto, met a few days ago in Toronto and declared the usual quarterly dividend. The firm reported a successful year's operations, with production and sales in excess of the previous year. George R. Carruthers is the head of the concern.

G. W. Sisson, of the Racquette River Paper Company, Potsdam, N. Y., was a recent business visitor in Toronto.

Brotherhood May Investigate Election Campaign

[FROM OUR REGULAR CORRESPONDENT]

ALBANY, N. Y., January 4, 1930.—Investigation of the campaign recently conducted by each of the candidates for the presidency of the International Brotherhood of Papermakers may be ordered by the executive board as the result of a resolution adopted by one local calling for such and with similar resolutions from other locals said to be on their way for presentation to the body when it convenes early in January in this city. The identity of the local filing the resolution was not made public at the headquarters of the organization although it was freely admitted that it has been received.

The resolution is said to contain actions against Matthew Burns, successful candidate for the presidency, W. R. Smith, defeated for re-election, and J. T. Carey, also defeated. Just what action the executive board will take in connection with the resolution is difficult to foretell. It is understood that Mr. Burns will preside at the sessions of the executive board but in considering the resolution will give way to some other member to preside for the time being. The board will also consider the alleged charges against A. F. McLeod, of Three River, P. Q., who was suspended from office two or three weeks ago. The executive board will remain in session several days.

New York Power Plant Nearly Completed

[FROM OUR REGULAR CORRESPONDENT]

GLENS FALLS, N. Y., January 4, 1930.—Construction work on the new power plant of the New York Power and Light Corporation near Conklingville is near completion under the direction of Stevens & Wood. The project is an outgrowth of the Conklingville Reservoir and will be used in supplying electric energy for the use of paper mills and other industries. The contracting firm has made excellent progress although there is still a great deal of work to be done. The setting of the speed rings has already been accomplished and two turbines will be placed later.

Many are under the impression that the new power plant will operate the year round but this schedule is not planned. The power house will operate only when water is being released from the Conklingville Reservoir to increase the flow of the Hudson River for the benefit of manufacturing interests.

Lakeview Mill at Neenah Begins Operations

Modern Plant of Kimberly-Clark Corp., Equipped For Capacity of 50 Tons Daily—Ensures Larger Production on Increased Line of Specialties—Considerable New Machinery of Special Design Installed—New Unit Contains Large Floor Space

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., January 6, 1930.—Employment was given to 225 persons when the Kimberly-Clark Corporation began operation last week of the new Lakeview mill located at Neenah, Wis. Equipped for a capacity of 50 tons a day, the mill will give the company a larger production on an increased line of specialties. Considerable new machinery of special design has been installed and a four story fireproof finishing and shipping building has been erected. The new unit contains 50,000 square feet of floor space and includes comfort rooms, restaurant facilitaies and first aid and medical service for employes.

Officials of the company have revealed their earlier intentions of erecting an entirely new and modern mill to take care of specialty production. In 1912, when the tariff on the importation of news print into the United States was removed, the company realized that smaller mills would be forced into something else if they would continue to exist. The company began remodeling some of its older properties for the making of specialties. Wall paper and box covers were the first attempts in this field, and the research department constantly has discovered new fields and today many products are made. These required special machinery, which the engineering department has been able to perfect for each situation.

Towards the close of 1928 it became evident that a modern mill would be needed, and plans were prepared with that end in view. Shortly afterward, Sears, Roebuck & Co., offered them the Lakeview mill at Neenah, where catalog papers had been manufactured. It was found that the two machines were of a desirable width and speed for the specialties of the Kimberly-Clark Corporation, and the deal was consummated.

Rumors had been current for some time that the company would abandon one of the oldest of its mills, the Atlas plant at Appleton, Wis., because it was said to be obsolete. The Lakeview mill was remodeled with this in mind, and the manufacturing operations of the Atlas mill were transferred to the new plant. The Atlas converting department continues to operate, however.

Stevens Point Mills Active

Full time operations and satisfactory demand are anticipated by the paper mills of Stevens Point, Wis. The Stevens Point division of the Consolidated Water Power and Paper Company, found the year 1929 on a par with 1928 and orders are continuing to be received in volume for 1930. The mill is operating full time. At the Wisconsin River Paper and Pulp Company, a better market is in prospect. The company was on a full time basis during the entire year 1929 and expects to continue that way all through 1930. Like optimism prevails at the Stevens Point Pulp and Paper Company, according to E. G. Goodell, manager. Business has been normal and the entire force of 75 men will be kept busy, as there is no problem of curtailment. The mill was closed for a brief period for repairs but resumed again on January 6.

Forest Products Laboratory Appropriation

President Herbert Hoover has been asked to push action on an appropriation of $900,000 for a new laboratory for the United States Forest Products Laboratory, Madison, Wis., the place where much experimenting for the good of the paper industry has been done. Governor Walter J. Kohler is back of the move. This building has been contemplated for eight years and it is hoped that the national movement for public improvements will bring this plan to fruition. The State of Wisconsin has deeded land at the University of Wisconsin to the government on which to erect the building. The original laboratory was built at State expense but was equipped and maintained by the federal government. A staff of more than 400 is employed there.

Marathon Developments

Thirty employes of the Marathon Paper Mills Company moved back from Chicago, Ill., to Menasha, Wis., on January 1, following the company's decision to revert back to its former custom of maintaining offices at the carton division there. The change to Chicago was made two years ago. Sales offices will continue in Chicago in the Wrigley Building. The company is making good progress on its new printing building at Menasha. Most of the work on the walls is done and the structure soon will be enclosed. Additional employees are to be added when the building is completed. Presses are to be moved to the new department and the old building will be torn down.

Union Bag Plant May Reopen

Newspaper reports at Kaukauna, Wis., are quoting rumors to the effect that the Union Bag and Paper Company would reopen its plant there in the near future and resume operations. R. A. Jacoby, resident manager, has refused to comment on the rumors. The plant was closed about June 1, shortly after the bag mill had been moved to Orange, Texas.

News of the Industry

The Nekoosa-Edwards Paper Company, Nekoosa, Wis., is planting 64,500 rainbow trout in Nepco Lake. The lake was formed a few years ago when the company built a large power dam and created this as a reservoir for storage of surplus water. The trout were raised in the Nepco hatchery and were kept there until they were about six inches long. The lake has become a popular summer resort and recreation place.

H. G. Galladay has become a member of the engineering staff of the Consolidated Water Power and Paper Company, Wisconsin Rapids, Wis. He was formerly with the Kimberly-Clark Corporation, Neenah, Wis.

Twenty-three Zionites, residents of Zion City, Ill., inspected the Gilbert Paper Company's mill at Menasha, Wis., last week. They were members of the sales department of the Zion Office Supply Company, and were shown the processes used in manufacturing Gilbert brands.

Drawing Paper Revalued

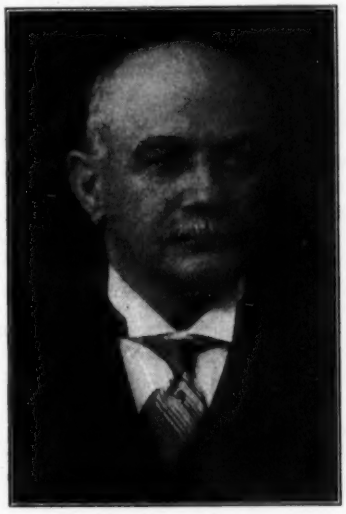
Seventeen importations of French imitation hand made drawing paper brought to this country by a single importer have been revalued by the Customs officials at a dutiable value nearly double that at which the importer entered the paper. Another question involving the durability of drawing paper has come to the attention of the Import Committee, this involving not only the valuation, but also the classification of the paper.

The customs officials at Washington have decided upon the method of classifying packet stationery imported from France, in which the paper is perforated and gummed to serve both as letter paper and envelopes, by pasting the outer edge of the sheet. The authorities have decided that this paper is dutiable as writing paper at 3 cents per pound and 15 per cent, plus additional duty for special finish when decorated, instead of being dutiable as manufactures of paper at 35 per cent. as claimed by the importers.

Golden Jubilee Banquet to William W. Jenks

BOSTON, Mass., January 6, 1930.—William W. Jenks, president of Stimpson & Co., Inc., paper and twine dealers, was given a Golden Jubilee Banquet on Christmas eve at the Chamber of Commerce by his associates and employees on the completion of fifty years' service with that firm. Forty-one were present. During the evening Willard H. Loud, treasurer of Stimpson & Co., testified to the high regard in which Mr. Jenks is held by the other members of the company and the employees. Mr. Loud, on behalf of all, presented Mr. Jenks with a handsome Gladstone traveling bag with the hope that he would use the gift on a vacation trip in February.

Those present from the firm were William W. Jenks, president; Alfred L. Gooch, vice president; Willard H. Loud, treasurer; Arthur M. Bartlett, secretary; William H. Tay, assistant treasurer, and Arthur L. Woodman, counsel.



WILLIAM W. JENKS

Mr. Jenks started with the firm as office boy September 9, 1879, employed by Henry Q. Stimpson, who was sole owner at that time. After a number of promotions he was made general manager in 1892. He continued in this position until 1927, when he was elected president on the incorporation of the firm. Mr. Jenks has received many congratulations from the trade on the completion of his fifty years' service.

The business of this firm began in November, 1856, at 60 Kilby street, founded by Binney & Lane (Benjamin S. Binney, formerly with Wilder & Co., and Sam'l G. Lane) handling about fifty kinds of paper, twine, board, boxes and sand sheathing. In 1872 the name of the firm was changed to Binney & Stimpson, with a warehouse at 10 North Market street and paper mills at Shirley, Mass. In 1876 Henry Q. Stimpson became sole owner and changed the location of the warehouse to 65 Chatham street where the firm carried on business until 1928 when they removed to the present address at 190-192 High street. When Mr. Stimpson died, his widow conducted the business until her death in 1927. The company now carries white paper as well as wrapping paper, paper towels, toilet paper, paper cups and twine. The concern uses one of the largest paper warehouses in New England, occupying six floors and a basement, also leasing House No. 21 of the Boston & Maine Railroad in Charlestown for storage.

Year Opens Favorably in Boston

BOSTON, Mass., January 6, 1930.—The year has begun favorably as a whole among the paper houses here. Some characterize the first few days as an "average opening," and see no signs of depression. The actual condition of the market at present is quiet, but not unexpected during the inventory season. Indications are good for a normal, prosperous year. The above applies not only to fine and kraft papers, but also to specialties.

Box board is rather quiet, but dealers are hopeful for an active year, with better prices.

Paper stock conditions are promising. In some quarters inquiries have been more frequent of late than at any previous time in the last three months, although from other sources comes the statement that the market is still rather quiet. The feeling is apparently general, however, that the situation generally will improve from now on. Mills are not carrying a heavy inventory, as they were at the beginning of 1929. There have been a few price changes in old papers. White blank news is quotable at 1.60 to 1.70, ten points higher than previously. The minimum price for No. 1 mixed paper has been marked to .30, but .35 remains the maximum. Foreign manila rope is quotable at 4.25 to 4.40, compared with a former price of 4.25 and transmission rope has declined from 3.00 to 2.75. Mixed strings are also lower, with a range of .90 to 1.00, against a previous flat 1.00. Scrap sisal for shredding has advanced, now being quoted at 2.25 to 2.50, compared with a former range of 1.85 to 2.00. Domestic rags are holding firm at the same levels. In foreign rags some report dark cottons at 1.50 to 1.55, while others quote a flat price of 1.55. Quotations vary slightly for old linsey garments, with a general range of 1.80 to 1.90.

Mead Co. To Pay Stock Dividend

DAYTON, Ohio, January 8, 1930.—Following is a letter issued to the holders of the common stock of the Mead Pulp and Paper Company explaining the action of the firm in substituting a stock dividend for the regular cash payment due January 15:—

"At a meeting of your board of directors held December 12, 1929, a resolution was unanimously passed substituting a stock dividend, at the rate of 8 per cent per annum (for the regular cash dividend, payable January 15, 1930, to stockholders of record on January 1, 1930.

"The profits for the year now closing are substantially in excess of the earnings for 1928 and have been sufficient to pay all regular dividends and at the same time materially increase the surplus of the company.

"The earnings for the first quarter of 1930 estimated on orders now on hand will be in excess of the corresponding period of any previous year, and while the operating demands at this time do not require it, an expansion program now in progress makes the conservation of cash desirable.

"In the opinion of your directors, this change in dividend policy materially enhances the value of your stock, but following the practice of other large companies, arrangements have been made with a banking group to purchase any dividend stock or script for fractional shares which the holders may wish to sell.

"Full instructions for handling such stock and script will accompany the stock dividend, which will go forward January 15, to all holders of common stock of record as of January 1, 1930."

Visit Mill of P. H. Glatfelter Co.

SPRING GROVE, Pa., January 7, 1930.—More than 1,500 persons visited the pulp and paper mills of the P. H. Glatfelter Company at this place New Year's Day, when Visitors' Day was observed. This number was the largest to come to visit the mills since the observance of Open House on New Year's Day was begun four or five years ago.

The registry book showed visitors from all over Pennsylvania and adjoining states. Many delegations being among those present.

Each visitor was given a pad of paper as a souvenir.

There was a display of books and other printed matter into which Glatfelter paper has gone during the past year.

Readjustment of News Print Prices Postponed

Manufacturers Inevitably Will Have to Retain Prevailing Quotations for First Six Months of Year—Hopes Entertained That Conditions At End of This Period Will Justify Position Taken and Lead to Price Revision as Originally Planned

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., January 6, 1930.—So far as the news print industry is concerned, the year opens with a distinct feeling of disappointment and depression, due to the failure to bring about such a readjustment of prices as would place the various news print manufacturing concerns upon a remunerative basis. The fact that the International Paper Company did not see fit to follow the majority of the Canadian manufacturers in establishing a higher price on a three-year contract basis has made it inevitable that all the companies will have to carry on, for the first six months of 1930, on the old basis, because no publisher would be foolish as to commit himself for 2½ years six months beforehand when he does not know what will befall meanwhile. It may be taken for granted, therefore, that W. G. Chandler, chairman of the paper committee of the American Newspaper Publishers Association, is substantially correct when he says that the Canadian companies are notifying their customers that the 1929 price for news print will be continued during the first six months of this year without the previous requirement of a 3-year contract carrying a $5 per ton increase for the last 30 months.

But while the Canadian companies naturally feel some regret that the time they had marked out was found to be impracticable, hopes are entertained that conditions at the end of the first six months will justify their position, and will lead to a revision of prices in accordance with their original plans.

Surplus Capacity Not Likely To Last

It is true that there is still a surplus of paper, or rather a surplus of capacity for the production of paper, but that condition is unlikely to last indefinitely; in fact, the feelng is that the industry has seen the crest of the wave of expansion. Admittedly two more new mills are under construction in Canada, but even taking these into consideration there is not the potential overhanging volume of news print to lay that there was two years ago, or even a year ago.

Tonnage Distribution Equitable

The great point the Canadian companies have sought to achieve is the equitable distribution of the tonnage, and that they have been able to bring about. The organization of the Canadian Newsprint Institute, and the willingness of the companies represented in that organization to work together, has enabled them to distribute tonnage in a fairly equitable manner, so that no mill has had to close its doors, and there has been no temptation on the part of any of the members to get out and scramble for business at any cost to keep their machines going and their workmen employed. It is felt that if they keep together for the next six months in the way they have been keeping together for the past six months, and prevent a wide-open, cut-throat market, which is the only alternative to co-operation, they will be in a pretty strong position when the time next arrives to form consideration of the price question.

In Canada there is every reason to assume that they will do so, and it is upon this point that the influence of the two Provincial Governments—those of Quebec and Ontario—has been brought particularly to bear. These Governments have been most insistent that the Canadian International Paper Company, the subsidiary of the International Paper Company, should co-operate by not taking more of the available business than is their fair proportion.

One news print executive here who was asked by your correspondent if the International Paper Company was giving the desired co-operation, replied, "Yes, as far as their Canadian mills are concerned, they are doing so, but they have met that situation by reopening three of their abandoned mills in the United States, and are apparently going to make up in the United States the tonnage they will forego in Canada. But there is this about the American mills, that they are much higher cost mills than the more modern Canadian mills."

Your correspondent is assured that the situation has not been fairly represented during the controversy by the argument that the proposed $5 per ton advance in prices would go into the pockets of the manufacturers and shareholders of the various companies. It is pointed out that both the Quebec and the Ontario Governments realize that with the present price of news print, these companies cannot provide as they ought for forest conservation, and that the only way in which the Governments can exact heavier stumpage rate for the purposes of forest protection is for the manufacturers to get a higher price for their product. The Provincial Governments, it is said, are not interested primarily in seeing that the companies get more profits, although as a matter of fact there are few companies paying dividends on their common stocks. To force the companies to pay higher stumpage dues for the purposes of preservation and replenishment of the forests while these companies are unable to get adequate returns for their products would be suicidal.

But the Governments are determined that they will not continue to expend the people's money for the preservation and upbuilding of forest reserves in order to provide the publishers of the United States with news print below the actual cost, and decisive steps of some kind would appear inevitable. Meanwhile both Premier Taschereau, of Quebec, and Premier Ferguson, of Ontario, have refrained from commenting on the breakdown of the negotiations for establishing a higher rate for news print.

Another Merger in the Offing

According to well-informed sources here, good progress has been made with a plan to bring about a merger between the St. Lawrence Paper Mill Company, the Lake St. John Power and Paper Company, and the Brompton Pulp and Paper Company, with the St. Lawrence Paper Mill Company as the dominating factor. These mills have a combined capacity of 927 tons of news print per day, with timber limits estimated to contain 20,000,000 cords of pulpwood.

Westminster Paper Co.'s Affairs

The Board of Trade of New Westminster, B. C., has unanimously endorsed a proposed civic by-law to guarantee interest on $300,000 of the Westminster Paper Company, Ltd. The City Council has also given its approval, and the by-law now awaits the sanction of the rate papers. The company's plant was wiped out by fire last July, and the remaining assets, amounting to $458,000, were insufficient to reconstruct the plant. Old customers of the mill signified their intention of remaining with the firm, and a larger plant was needed to take care of the increasing business. Profits of the company for the fiscal year ended July, 1927, were $37,500, while for the next year they amounted to $40,600. Anticipated profits for the year ending July last had been $85,000. The company's manufactures consist of Kraft and sulphite wrapping paper, oiled vegetable fruit wraps, tissues, towels, and other specialties, the total capacity having been 36,000 lbs. per 24 hours.

*Manufactured under license from the Centrifugal Engineering and Patents Corporation, owners of the Erkensator patents.

IT'S BETTER TO BE FIRST

The mills that profit most from improvements are the mills that adopt them first. Mills that are now installing Bird Centrifiners [eleven of them, so far] will be making paper that is really clean, making it at a greater net profit, while less progressive competitors are wondering what it's all about.

Let us give you complete information on Bird Centrifiners* now.

BIRD MACHINE COMPANY

SOUTH WALPOLE · MASSACHUSETTS

BIRD MACHINERY

NOW YOU CAN MAKE PAPER THAT IS REALLY CLEAN . . .

USE BIRD CENTRIFINERS

3610

Freight Rating on Liquid Chlorine

The liquid chlorine complaint of the Mathieson Alkali Works, before the Interstate Commerce Commission, asking for a general reduction in the freight classification ratings on tank car liquid chlorine, was heard in Washngton, December 6 and 7. The Mathieson Alkali Works case was presented by its counsel, Wilbur LaRoe, Jr., assisted by Harry M. Mabey, Mathieson's general traffic manager; Charles E. Bell and Jos. C. Colquitt, consulting traffic experts; Gen. Amos A. Fries, ex chief—Chemical Warfare Service; together with Benjamin T. Brooks and Morris R. Sherrerd, consulting engineers. This formal proceeding marks a continuation of Mathieson's efforts to have the railroads reduce the rating on tank car liquid chlorine in the Official, Southern and Western Classifications, which govern freight charges throughout the United Sates.

Conditions Surrounding Production

In the presentation of the Mathieson case at this two-day hearing, a very complete showing was made of the conditions surrounding the production and marketing of liquid chlorine in the United States. It outlined the well known fact that the electrolytic alkali process, unavoidably, must produce three substances, —chlorine, caustic soda and hydrogen, and that manufacture was restricted by the extent of producer's ability to market liquid chlorine.

The increasing strength of the consuming market for caustic soda was stressed as causing an economic need for greater productive ability in the electrolytic alkali industry, that electrolytic manufacturers might participate in the increasing demand for caustic soda. The definite trend toward greater production of both chlorine gas and caustic soda by consumers thereof at their own plant locations, together with the depressing influence of this consumer production upon the price levels of liquid chlorine was also set forth. The decline in the bleaching powder market as an outlet for chlorine was shown to have had a detrimental effect upon the industry.

The extreme decline in price level of liquid, coupled with increase of consumer's productive ability, was graphically outlined. In the period of ten years beginning 1920, the open market value was shown to have been steadily reduced; present value of 2-¼ cents per pound, as against nearly three times that selling price in 1920—when liquid chlorine was quoted at 8 cents per pound.

The importance of chlorine gas as a raw material essential to the Chemical Warfare Service, particularly when transported in the form of liquid chlorine, as well as the necessity for preparedness in the manufacturing, shipping and transportation of the commodity during peace times was elaborated upon in detail by Gen. Amos A. Fries, in his testimony.

Mr. Morris R. Sherrerd, Consulting Sanitary Engineer, explained in considerable detail its importance in the maintenance of public health throughout the country, in that chlorine is used extensively as an agent in the sterilization of public water supplies, and unquestionably could and would be more extensively used in disinfection of sewage wastes, thereby preventing contamination of streams and sources of water supplies, provided the commodity could be delivered to the consuming trade, especially municipalities, on a more favorable and economical basis. His expressed opinion was that only by mass production, fostered by the adoption of any measure that might tend to lower the delivered cost of liquid chlorine, could the producer be enabled to maintain its present-day low market level.

As justifying the reduction in rating applied for, all railroad records of the transportation of liquid chlorine since the beginning of its manufacture in the United States were submitted for analysis. These statistics indicated that, while there have been handled considerably over one million cylinders, and at least twenty thousand tank cars filled with liquid chlorine, only 41 accidental leakages, with a total property loss of $2,683.00, are reported by the railroads as having occurred during the transportation of these filled tank cars and cylinders.

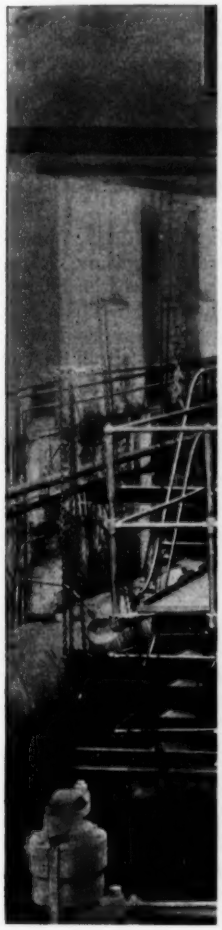
The Mathieson complaint asked for a reduction in the rating from Fourth to Fifth Class in the Official Classification, which governs in that part of the United States, roughly, east of the Mississippi River and north of the Ohio and Potomac Rivers: a reduction from Fourth to Fifth Class in Western Classification fication Territory, which embraces the territory south of the Ohio and Potomac Rivers and east of the Mississippi River, and a reduction from Fourth to Fifth Class in Western Classification Territory, which is that part of the country west of the Mississippi River.

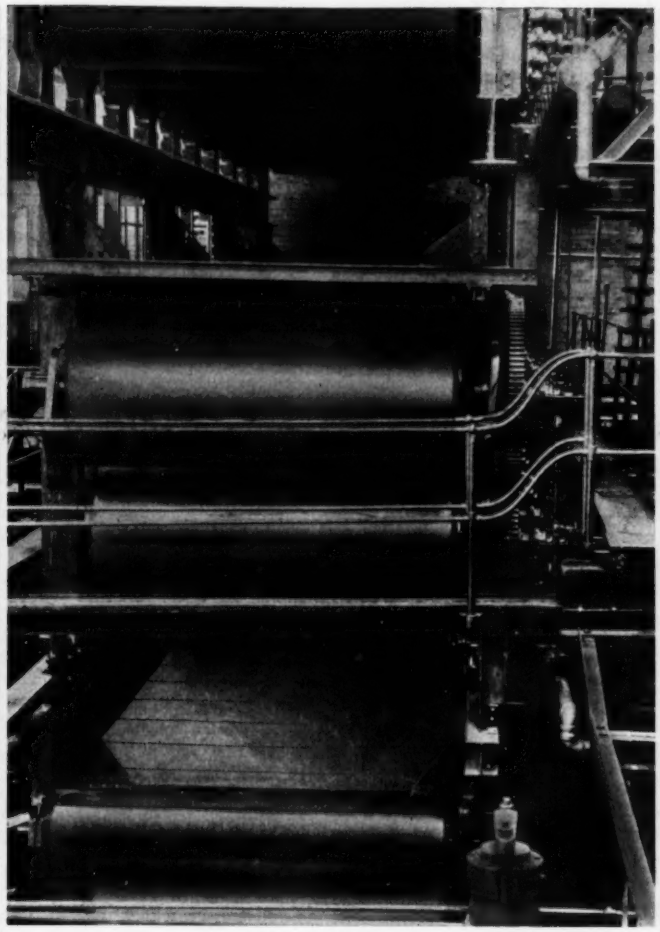
From this it will be seen that the Official Classification Territory embraces all of New England, all of New York State, all of New Jersey, Pennsylvania, Delaware and Maryland, all of Ohio, Indiana, most of Virginia, Illinois, Michigan and Wisconsin. A favorable decision in the Mathieson case, therefore, will approximate a reduction as great as 30 per cent in the rating applicable to liquid chlorine within this great consuming area, and reduce costs in the pulp and chemical engineering industries, and benefit, besides, consumers for sanitation and other purposes, throughout the most important industrial section of the United States, a territory which, roughly, consumes 80 per cent of all the liquid chlorine marketed. To the Southern consuming area a similar reduction in rating is applied for. To the territory west of the Mississippi River, described as Western Classification Territory, a favorable decison in this case would result in a reduction ranging from 27 to 32 per cent of the present freight rating.

It was shown, in testimony, as evidence of the failure of the carriers to give consideration to the expansion of the industry and the changes that have taken place in the marketing and price levels of liquid chlorine, that the freight classification which at present governs, and is now under attack, has remained unchanged since the rating was originallly established in 1907, many years before a pound of liquid chlorine was marketed commercially in this country. The development of tank cars, safety devices and improved methods of handling by the industry, the Bureau of Explosives and the Interstate Commerce Commission itself, was outlined, and compared with the history of the manufacture, transportation and use of a tremendous tonnage of Liquid Chlorine without the occurrence of a single accident of other than a trivial nature. These facts were set forth as convincing evidence, based upon a long perod of actual experience, that the manufacture, transportation and use of liquid chlorine in the industry had become so standardized and safeguarded that likelihood of accident, due to hazards of handling, had been made so remote as to be negligible.

In conclusion, it was urged that present day facts had so changed that the basis established in 1907 was no longer justifiable, and that a much lower rating was now warranted.

A favorable decision in this Mathieson case will also have a most important effect in tending to prevent threatened increases in freight rates on tank car liquid chlorine. As heretofore reported, in a case now pending before the Interstate Commerce Commission for decision, the railroads serving the Eastern part of the country have publicly proposed to extensively revise their freight rates on all classes. Under the existing classification rating, which is attacked in the Mathieson case, this revision would make widespread and serious increases in the freight charges on liquid chlorine. Only the success of this Mathieson case will enable the consumers of tank car liquid chlorine to avoid the payment of higher freight charges than they are now subjected to, should the revised class rates, which the railroads are trying to establish, receive the approval of the Interstate Commerce Commission.





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This Three Tier, Two Deck Dryer arrangement has many apparent advantages. Ninety-five dryers in this layout occupy the same floor space as thirty-three, Double Decked. . . . . A diagram in our new Catalog Section 105, fully explains the arrangement of these Dryers. . . . . Write for it today, and if you are in need of additional dryer capacity, let us bid on your requirements.

DOWNINGTOWN MFG. CO.
DOWNINGTOWN, PA., U. S. A.

The Paper Industry in 1930

Continuation of business in 1930 along essentially the same lines as in 1929 is shown by a recent survey of business prospects in the paper industry, conducted by the American Paper and Pulp Association.

The volume of business in 1929 broke all previous records. The prospects for a continued increase in volume similar to that of 1929 are not promising yet indications point to a volume for 1930 which probably will equal that of 1929.

Expenditures for plant improvements and maintenance in 1930 approximating normal expenditures for recent years are indicated by reports from affiliated and grade associations to the American Paper and Pulp Association. A marked decrease in expenditures for the building of new productive facilities, however, is also revealed. This is looked upon as favorable rather than unfavorable because of the present over-produced condition of the industry.

An over-production capacity of approximately 25 per cent exists in the paper industry. This excess, when viewed in connection with the rapid rise in consumption of paper in the United States during the past decade, evidences the fact that expansion has been more than was needed. This has resulted in weakening the price structure throughout the industry and profit margins have been exceedingly narrow. It is expected that heavy volume and narrow profits will continue throughout 1930.

If there is a slight falling off in volume during the first quarter of 1930, in sympathy with general business recession, it is felt that increased volume during the remainder of the year will bring the total volume to the 1929 level.

Planned expenditures for advertising constitutes one of the best indices of sales volume in certain branches of the paper industry. A recent survey of proposed expenditures, undertaken by the Association of National Advertisers, shows a total for 1930 of $206,000,000 as compared with $186,000,000 for 1929. This increase not only indicates sustained business volume but it is as well indicative of the optimism with which leaders view the future.

News of the Chicago Paper Trade

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., January 6, 1930.—J. P. Brunt, vice president of the Container Corporation of America, and president of the Mid-West Box Company, gives a number of interesting figures on the fiber container industry. Mr. Brunt describes this industry as a "cycle of economy" because it uses, for its raw materials, waste paper and straw that would otherwise be wasted. The Container Corporation executive states that the annual sales of the fiber container industry exceed $200,000,000, which, added to over $100,000,000 sales in paper board for set up boxes, makes an industry in which annual sales are between $300,000,000 and $400,000,000. Mr. Brunt also gives an interesting history of the industry from its inception in 1871.

An unusual item of interest in the coming January meeting of the Paperboard Industries Association, January 21, 22 and 23, will be a report on the potential manufacturing capacity of the industry. According to an announcement from the Chicago offices of the association, as complete figures as possible will be given, subdivided by appropriate divisions.

The Mill Price List of the West Virginia Pulp and Paper Company as of January 2, 1930, was issued last week. Quotations are listed and descriptions are given in this quarterly folder of twenty-four Westvaco lines. Announcement is also made that the seventeen mills of the West Virginia Pulp and Paper Company are now making over 1,400 tons of pulp and paper daily.

The J. W. Butler Paper Company has recently issued a small four page folder describing Buckeye Text, the folder printed on Buckeye White Wove, 80 pound. The paper is described as useful in increasing charm of design and attractiveness of direct mail.

Friday, December 27, W. P. McNulty, of the McNulty Paper and Twine Corporation, 535 West Chicago avenue, left Chicago via automobile en route to Miami Beach and Havana, Cuba. W. P. McNulty feels justified in spending a winter vacation of three or four weeks in the South in view of the satisfactory results enjoyed by the company both from a sales and net profit standpoint during 1929.

News of the Boston Trade

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., January 6, 1930.—Warren L. Chace, formerly of the Whitcomb Envelope Company, Worcester, Mass., a Division of the United States Envelope Co., is associated with Stimpson & Co., as of December 30, as sales manager. Mr. Chace has had considerable experience both in selling and sales organization. He is an overseas man, pilot in the U. S. air service with the rank of lieutenant.

Boston paper merchants have received from the Albemarle Paper Manufacturing Company samples of their new line of striped kraft, not only in brown, but in colors of different combinations. It is an attractive line, largely for high grade wrappings and bag manufacturers.

The Hollingsworth & Whitney Company has removed its Boston offices from 100 Milk street to the new United Shoe Machinery Building at 140 Federal street, where they will occupy the fifteenth floor.

Carter Rice & Co. Corporation are planning a series of talks from representatives of prominent concerns in allied industries at meetings of their sales force throughout 1930. The speakers will discuss subjects pertinent to the paper industry so as to make salesmen conversant with printing methods and treatment and enable them to talk more intelligently to their customers in regard to the customers' particular problems. The general scheme of the series is to follow the paper through the printing plant. The first meeting of this kind is to be held Saturday morning, January 11, at 8 o'clock, when Arthur Rohn, president of the Smith & Porter Press, Boston, will talk on "Color Psychology and its Relation to Paper." At the February meeting a representative from an advertising agency will speak; in March, a commercial artist, and in April, possibly an engraver.

A program is being arranged for the annual meeting of the New England Paper Merchants Association, to be held at the Harvard Club of Boston, January 16.

Chicago Paper Trade Optimistic

[FROM OUR REGULAR CORRESPONDENT]

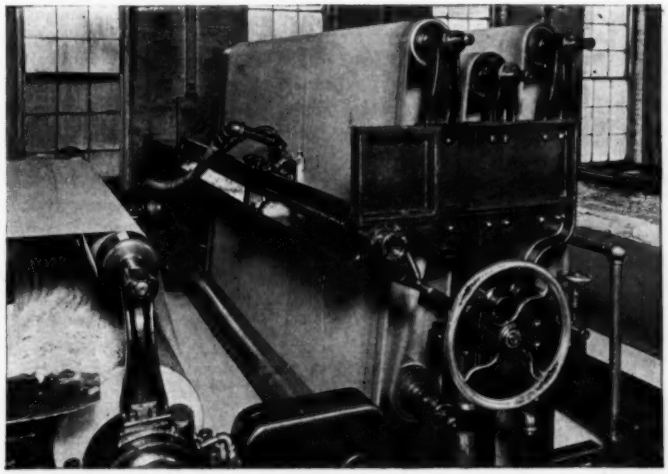
CHICAGO, Ill., January 6, 1930.—With its greatest year, from the standpoint of paper consumed, behind it, the paper trade in Chicago confidently expects 1930 to see a continuation of the progress made. According to a number of Chicago wholesalers of paper the use of printed matter in the sale of goods will be a feature of the coming twelve months. At the same time they confidently expect the volume of advertising in publications to hold up well. Continued use of the Federal Trade Commission by a larger number of paper groups is expected to be another characteristic of 1930. The increasing complexity of distribution problems is expected to bring the Federal Trade Commission more and more into practical usage. In the present market all grades of paper are carrying forward into the new year with good prospects.

Chemical Pulp Prices at Stockholm

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., January 8, 1930.—Quotations on bleached sulphite pulp and on the minimum price asked for strong sulphate show a decrease during the first week in December, while the maximum price of strong sulphate increased, according to a report from Consul General John B. Osborne, at Stockholm.

FOR ADDED PROFITS.....USE THE VICKERY FELT CONDITIONER



Mills using Vickery Felt Conditioners have been able to increase production.

Many of them have increased felt life. All of them have improved paper quality, and added to profits.

See what the Vickery Felt Conditioner will do in your mill. Let us install one on a press felt, at our expense.

BIRD MACHINE COMPANY

SOUTH WALPOLE
MASSACHUSETTS

3607

New York Trade Jottings

Announcement has just been made of a change in the title of the company heretofore known as the E. K. Mansfield Company, paper mill engineers, of 501 Fifth Avenue, New York. The name of the company hereafter will be known as Mansfield, Bolton & Kent, maintaining offices at their same address, 501 Fifth Avenue, New York.

* * *

Irving Fellmar, of the McGraw-Hill Publishing Company, was the guest speaker at the regular weekly luncheon and meeting of the New York Division of the Salesmen's Association last Monday, held at the Fraternities Club, New York. The subject of his interesting and instructive talk was "The Application to a Marketing Problem."

* * *

United Paperboard Company, Inc., New York, reports for six months ended November 30, 1929, profit of $253,172 after expenses, but before depreciation and federal taxes. This compares with $233,278 for six months ended November 24, 1928. Stock outstanding consists of $1,317,200, 6 per cent preferred stock and 120,000 shares (par $100) common stock.

* * *

Consolidated statement of Scott Paper Company, and subsidiaries as of September 29, 1929, shows total assets of $6,981,522, comparing with $6,559,755 on December 31, 1928, and total surplus of $3,196,348 against $2,793,563. Current assets totaled $1,723,727 and current liabilities $362,266, comparing with $1,975,685 and $487,973, respectively, on December 31 ,1928.

* * *

At a meeting of the board of directors of the Permutit Company, manufacturers of water softeners, etc., of 440 Fourth Avenue, New York, held Monday, December 30, H. Kriegsheim, who has been president of the company for the past seven years, was appointed chairman of the board, and W. Spencer Robertson, formerly secretary of the American Locomotive Company, was appointed president of the company. Mr. Kriegsheim will continue to take an active interest in the management of the Company.

* * *

Announcement has been made of the marriage on December 31, at The Little Church Around the Corner, New York City, of C. Lucile Tanner, of the staff of the Import Committee of the American Paper Industry, and Laurence E. Miller of Kew Gardens. Mrs. Miller, who came to New York from Syracuse when the Import Committee was formed, will continue as its secretary, where she has been assistant to Warren B. Bullock, manager of the organization. Through her work with the Import Committee, Mrs. Miller is becoming one of the best known women in the paper industry.

* * *

At a meeting of the Robert Gair Company, New York, directors, no action was taken in regard to declaration of the 68¾ cents quarterly dividend on the Class A stock due at this time. George W. Gair, president, in notice to stockholders says—"1929 has proven an unprofitable year, due to the general conditions in the industry, and the immediate outlook does not justify the payment of dividends until conditions improve. "In advance of the annual report, which will be presented at stockholders meeting on February 27, you should know that the company's financial position is very strong."

* * *

Arthur N. Waring, of the Arthur N. Waring Company, distributor of paper and paper products, of 52 Vanderbilt Avenue, New York, announces that he has severed his connection with the Bayless Pulp and Paper Corporation. Mr. Waring has made an arrangement with the Contiental Paper and Bag Corporation to manufacture for the account of his company grades of paper similar to those he has been handling, in addition to other grades Through this arrangement the Arthur N. Waring Company is now able to offer a comprehensive line of all wrapping papers under brand names, also specialty papers, the sale of which will be under their exclusive control. These papers will be made at Rumford, York Haven, Marinette, Nenominee and Oconto Falls, will be invoiced by the Arthur N. Waring Company and the complete transactions will be controlled by this company.

* * *

The receivership of the International Combustion Engineering Corporation, New York, has been made permanent by Judge Alfred C. Coxe. Wilfred R. Wood, president of the company, and one of the temporary receivers, has been named as a permanent receiver and the Irving Trust Company substituted for Nathaniel A. Elsberg, attorneys representing stockholders' protective committees and the creditors joined in asking for the permanent receivership, stating that a hasty reorganization is necessary. Mr. Elsberg, questioned as to the cause of the receivership, said he believed it was due to over-optimistic expectations of processes still somewhat in the experimental stage. Col. Joseph Hartfield, of White & Case, attorneys for the company, said that a reorganization plan will be submitted shortly to stockholders and creditors. This plan, he said, will provide fresh working capital, which should enable the company to increase its earnings substantially.

* * *

The Annual Convention of the National Paper Trade Association of the United States will be held in New York City, Monday, Tuesday and Wednesday, February 17, 18 and 19, with headquarters at the Pennsylvania Hotel, where splendid accommodations have been arranged for. The Convention entertainment, held Wednesday evening, February 19, will consist of a Theatre Party and Supper Dance. The association has secured a large block of and best orchestra seats for the Jack Donahure show, "Sons O' Guns," at the Imperial Theatre on 45th street, just West of Broadway. This is one of the season's most successful musical comedies. Just across the street from the theatre is the Hotel Astor where the Supper Dance will be held and where the association had such a delightful party three years ago. The announcement is made thus early so that members may know what to anticipate and those who may be in New York may postpone seeing "Sons O' Guns" until Paper Week.

* * *

The Container Corporation of America reports for ten months ended October 31, 1929, net profit of $622,885 after depreciation, interest and federal taxes, equivalent after dividend requirements on 7 percent preferred and the Class A stocks, to 39 cents a share on 588,289 no-par shares of Class B stocks. Consolidated income account for ten months ended October 31, 1929, follows: Profit from sales $1,762,429; depreciation $625,025; balance $1,137,404; other income $52,247; total income $1,189,651; interest $489,780; federal taxes $76,986; net profit $622,885. The New York Stock Exchange has admitted to the list 117,514 additional shares of Class A common stock, $20 par, of Container Corporation of America. Issuance of these shares has been authorized by Container Corporation for the purposes of acquiring the assets, subject to liabilities, of Sefton Manufacturing Corporation and assets, subject to liabilities, of Dixon Board Mills, Inc. Both of these acquisitions have been controlled by Sefton, Inc., to date. The Sefton plants are completely equipped for the manufacture of corrugated containers, folding boxes and pails, and the Dixon plant completely equipped for the manufacture of paper board and strawboard.

A variety of Mitscherlich and Direct Cook Sulphites to satisfy all paper-making requirements

MDM	(Direct Cook)
Korsnas L	(Mitscherlich Process)
Storvik HS	(Mitscherlich Process)
Robertsfors R and RI	(Direct Cook)
Svano Extra L	(Mitscherlich Process)

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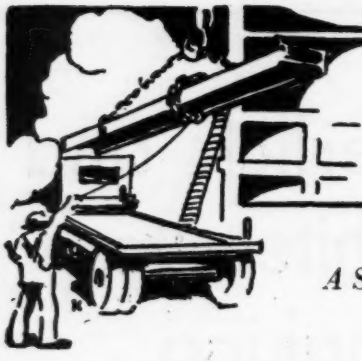


CONSTRUCTION NEWS

A Summary of Vital Facts Regarding Construction, Finances and Operation of Paper Mills

Construction News

Los Angeles, Cal.—The Los Angeles Paper Box Company, 3324 South Main street, has taken out a permit for a new addition to its plant, to be one-story, reinforced-concrete, 150x200 feet, located at 2615 Pitt street, and will proceed with superstructure at once. It is estimated to cost about $50,000, with equipment. William Knowles, 1214 Webster street, Oakland, Cal., is architect in charge.

Everett, Wash.—The Puget Sound Pulp and Paper Company has arranged with the Puget Sound Power and Light Company, Seattle, Wash., for the construction of a power substation for service at its mill, and work will be placed under way at early date. The power company has transmission line facilities available. The substation will cost about $80,000, with equipment.

Vicksburg, Mich.—The Lee Paper Company is operating on a normal capacity schedule, giving employment to about 200 operatives, or approximately the same number as at this time a year ago. Advance bookings are said to closely parallel those of last January. It is expected to hold to the present production basis for an indefinite period.

Brooklyn, N. Y.—The Imperial Paper Box Corporation, 495-505 Sackman street, is completing plans for a new addition to its plant, for which bids will soon be asked on general contract. It will be four-story, brick, estimated to cost about $65,000, with equipment. S. J. Fox, 66 Court street, Brooklyn, is architect, in charge.

Albany, N. Y.—The Capital City Corrugated Container Corporation, recently organized with a capital of $75,000, by Frank P. Dolan, 1015 Madison avenue, Albany, and associates, is said to be planning early operation of a local plant for the manufacture of a line of corrugated boxes, cartons, etc. George C. Reardon, 248 Eighth street, Troy, N. Y., is interested in the new company, which will be represented by Stern & Hirschfeld, 36 State street, Albany, attorneys.

Chicago Ill.—The Container Corporation of America, Inc., 111 West Washington street, manufacturer of corrugated boxes and containers, has concluded negotiations for the purchase of the Sefton Manufacturing Corporation, 59 East Madison street, Chicago, manufacturer of kindred products, folding boxes, etc., and the Dixon Board Mills, Inc., an affiliated organization of last noted company, with headquarters at the same address, manufacturer of paperboard, straw board, etc. The purchasing company will consolidate the acquired interests with its organization. Purchased mills and plants are at Chicago, Anderson, Ind., Carthage, Ind., and Brooklyn, N. Y., and will be continued in operation as heretofore. It is proposed to carry out an expansion program for increased output.

Monroe, Mich.—The River Raisin Paper Company, Monroe, is said to be planning an expansion and improvement program during the coming year to cost about $200,000, providing facilities for increased capacity. The company is now giving employment to more than 850 operatives, in excess of the number at this time a year ago, and running at regular capacity, to be continued for an indefinite time.

Philadelphia, Pa.—The Old Dominion Fibre Corporation, recently organized by D. H. H. Felix, 5441 Wayne avenue, Philadelphia, and associates, is said to be arranging for the operation of a local plant for the manufacture of a line of fiber specialties. Mr. Felix will be treasurer of the new company. Israel Stiefel, 1416 South Penn Square, Philadelphia, is interested in the company.

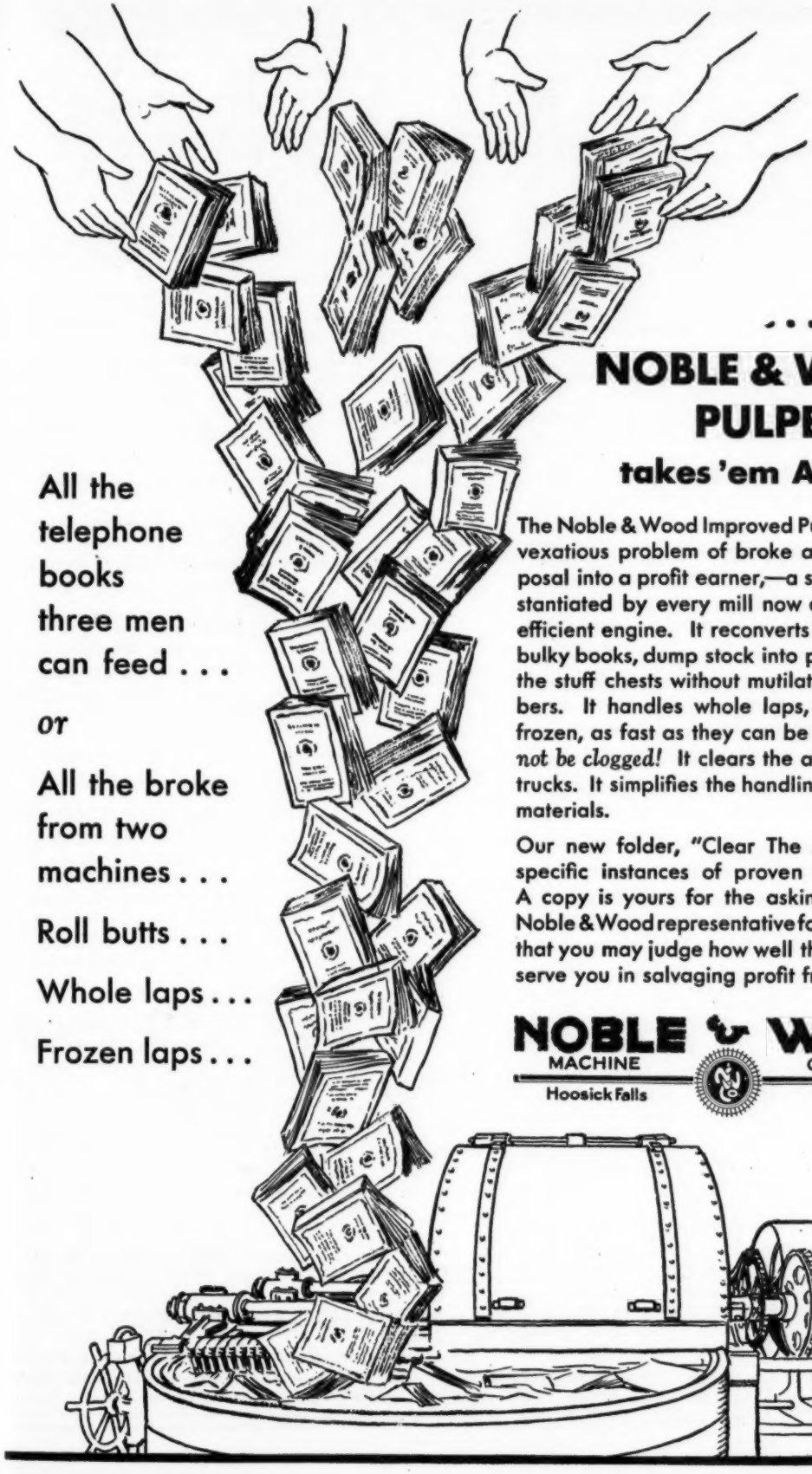
Menasha, Wis.—The Kimberly-Clark Corporation, Neenah, Wis., is arranging for the early operation of its new pulp and paper mill unit at Menasha, formerly owned by Sears, Roebuck & Company, Chicago, Ill., and taken over a few months ago. It will be known as the Lakeview mill and will have a rated capacity of about 50 tons per day. The purchasing company has been making a number of improvements in the plant prior to placing in service. Plans are maturing for a new addition to the mill of the company at Kimberly, Wis., to be used primarily for finishing service, and it is understood that superstructure will be placed in progress at an early date. The structure will be one-story, 122x127 feet, and is reported to cost close to $100,000, with equipment. A portion of the unit will be given over to storage and distributing service.

New York, N. Y.—A group of companies of similar name has been organized to manufacture insulating board and kindred specialties. The concerns will be known as the Kelly Smithtainer Corporation, Animated Smithtainer Corporation, Kline Smithtainer Corporation, Nathan Smithtainer Corporation, and the Texas Smithtainer Corporation, all with individual capitalization of 400 shares of stock, no par value. The incorporators are Ira O. Percifield, 3905 avenue K, Brooklyn, N. Y., Paul J. Bogie, 127-11 Seventh avenue, College Point, L. I., and associates. It is understood that the different organizations will arrange for the operation of plants in this vicinity at an early date, all producing under special patents.

Orono, Me.—Approval has been given for a merger of the Eastern Manufacturing Company, Brewer, Me., and the Orono Pulp and Paper Company, Orono, by the boards of directors of both organizations, and the consolidation will be carried out at once. In the future, the Eastern company will operate the mill at Orono under the present Orono Pulp & Paper Company name. It is understood that an expansion and improvement program will likely be developed at the mill in the near future. The consolidated organization will have combined assets of about $18,000,000.

Kalamazoo, Mich.—The Rex Paper Company is running on regular production schedule, giving employment to normal working quota. It is proposed to hold to this basis for an indefinite period. The company reports advance bookings as lower than at this time a year ago, with general improvement in account anticipated in the near future.

Harrisburg, Pa.—The Harrisburg Paper Box Company is holding to a full-time production schedule, following heavy holiday business for paper boxes and containers, and will give employment to regular working quota. The company recently completed an



All the telephone books three men can feed . . .

or

All the broke from two machines . . .

Roll butts . . .

Whole laps . . .

Frozen laps . . .

. . . the NOBLE & WOOD PULPER takes 'em ALL

The Noble & Wood Improved Pulper turns the vexatious problem of broke and waste disposal into a profit earner,—a statement substantiated by every mill now operating this efficient engine. It reconverts broke, waste, bulky books, dump stock into pulp ready for the stuff chests without mutilation of the fibers. It handles whole laps, even though frozen, as fast as they can be fed. *It cannot be clogged!* It clears the aisles of broke trucks. It simplifies the handling of awkward materials.

Our new folder, "Clear The Aisles," gives specific instances of proven performance. A copy is yours for the asking. Or ask a Noble & Wood representative for the full story, that you may judge how well this pulper can serve you in salvaging profit from waste.

NOBLE & WOOD
MACHINE COMPANY
Hoosick Falls New York

addition to its plant for storage and distributing service, located on Vernon street.

Chicago, Ill.—The Commercial Wall Paper Mill, Inc., Hammond, Ind., has leased space in its building at Ogden and Talman avenues, Chicago, to the Garden City Plating & Manufacturing Company, which will occupy for general expansion.

Lisbon, Ohio—The Lisbon Sales Book Company, manufacturer of commercial paper products, has resumed operations on a capacity basis at its plant, following brief curtailment during the holiday period, following regular annual procedure, and will continue on adopted schedule for an indefinite time. E. M. Crosser is general manager.

Port Arthur, Ont.—Following a shut down for about a month, the Thunder Bay Paper Company, Ltd., has resumed operations at its local news print mill, and will give employment to a full working quota until further notice. The company is said to have booked sufficient business to insure operations for some time to come. It is controlled jointly by the Abitibi Power & Paper Company, and the Canada Power and Paper Company.

Liverpool, N. S.—The Mersey Paper Company is running at its new local mill, and two news print machines are in service, developing an output of about 250 tons per day. It is expected to hold to this schedule for some time ahead, giving employment to a full working quota. A third paper-making machine will be installed at a later date.

Moraine, Ohio—The Moraine Box Company, Kreitzer Road, manufacturer of cardboard boxes, containers, etc., will proceed with new addition to plant for increased capacity, to be one and two-story, 112x120 feet, reported to cost more than $70,000, with equipment. General contract has been awarded to Charles Shook, Inc., Third National Bank Building, Dayton, Ohio, and award for plumbing and heating to the Osterfeld Plumbing Company, Dayton. Schenck & Williams, Third National Bank Building, Dayton, are architects.

Winnipeg, Man.—Fire recently damaged a portion of the plant of the Prairie Paper Mills, Ltd., with loss reported at close to $13,000. The damage will be replaced.

Piqua, Ohio—The Orr Felt and Blanket Company, Piqua, manufacturer of paper-makers' felts, etc., is said to be planning an expansion program at plant to cost close to $100,000.

New Companies, Etc.

New York, N. Y.—A. Meyers & Sons Corporation has been incorporated with a capital of $100,000, to manufacture and deal in paper products of various kinds. G. R. Rubin, 261 Broadway, New York, is one of the incorporators and representative.

Chicago, Ill.—The V. F. Gransden Corporation, 608 South Dearborn street, has been formed with a capital of $10,000, to manufacture and deal in paper goods of various kinds. The incorporators are J. M. Daugherty, E. B. Patterson and M. L. Donahue.

Worcester, Mass.—Wing Wall Paper Company has been incorporated with a capital of $90,000, to manufacture and deal in wall paper stocks. Walter S. Wing is president; and Michael Goldblatt, Brookline, Mass., treasurer and representative.

New York, N. Y.—The Clinton Paper Company, Bronx, has arranged for an increase in capital from $50,000 to $75,000, for general expansion.

Benton Harbor, Mich.—The Rockaway-Stouck Paper Company, Benton Harbor, has arranged for an increase in capital from $100,000 to $600,000, for general expansion.

Camden, N. J.—The Mutual Wall Paper Company has been incorporated with a capital of $25,000, to manufacture and deal in wall paper stocks, etc. The company will be represented by the New Jersey Corporation Guarantee & Trust Company, Camden.

Clarksburg, W. Va.—The Atlas Paper Box Company has filed notice of increase in capital from $50,000 to $100,000, for general expansion. H. T. Bryan is president.

Jackson, Mich.—The Crown Paper and Bag Company has arranged for an increase in capital from $40,000 to $85,000 common stock, and $15,000, preferred stock, for expansion.

Los Angeles, Cal.—The Square Deal Bag Corporation has been incorporated with a capital of $10,000, to manufacture and deal in paper bags and containers. The incorporators are Isaac Kipniss and H. V. Goldberg. The company is represented by L. A. Bloom, California Building, Los Angeles, attorney.

New York, N. Y.—The New York Blue Print Paper Company, 96 Reade street, has arranged for an increase in capital stock from $800,000 to $2,000,000, for general expansion.

Philadelphia, Pa.—William C. Ferguson, Jr., has been appointed receiver for the Art Paper Novelty Company, 720 South 11th street, in bond of $10,000.

Detroit, Mich.—The Butler Paper Company, 851 Porter street, has filed notice of increase in capital from $200,000 to $250,000, for general expansion.

Chicago, Ill.—The Vortex Manufacturing Company, 421 North Webster avenue, manufacturer of paper cups, etc., a Delaware corporation, has filed notice of change of company name to the Vortex Cup Company. The company recently arranged an expansion program.

Chicago, Ill.—The Odman Paper and Twine Corporation, 122 West Kinzie street, has filed notice of change of name to the Odman Corporation.

Aurora, Ill.—The Insulating Products Company, Aurora, has arranged for an increase in capital from $100,000 to $75,000 and 20,000 shares of common stock, no par value, for general expansion.

Receiver For Paper Mill Discharged

[FROM OUR REGULAR CORRESPONDENT]

DENVER, Colo., January 4, 1930.—A court decree discharging George W. Beck as receiver for the Colorado Pulp and Paper Company has been signed by Judge Samuel W. Johnson, closing a two year reign.

The paper company was recently sold by the receiver and is now being operated by the new owners under the name of the Colorado Paper Products Company.

With the court order, rumors are afloat that all has not been settled, one of the principal disputes being the distribution of about $10,000, and the creditors, stockholders and bondholders want to know more about it. Then there were many decisions made by Judge Johnson during the two years which some have taken exceptions to and further litigation may result. However, Judge Johnson instructed receiver Beck not to file a final report on the receivership until the question of the distribution of the remaining money has been settled.

Insurance for Kalbfleisch Employees

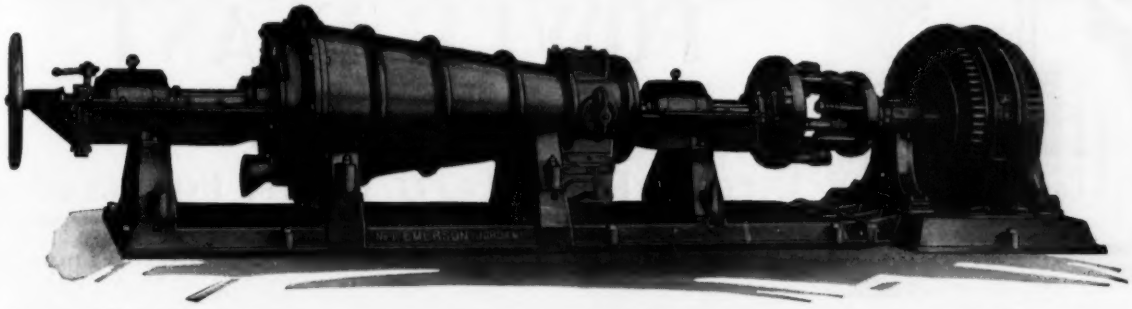
The Kalbfleisch Corporation has purchased group insurance for its personnel. This progressive step on the part of the company was inspired by a feeling of responsibility, and a desire to promote the interests of its employees.

The group policy which the company has obtained is effective for every person in the employ of The Kalbfleisch Corporation for six months or more. It is given to the employees without charge. The policy was issued by the Prudential Life Insurance Company.

J. H. Metcalf Leaves Howard Smith Mills

John H. Metcalf, who has been general purchasing agent for Howard Smith Paper Mills, Ltd., for the past sixteen and one-half years and the Canada Paper Company, Ltd., for the past year, has resigned.

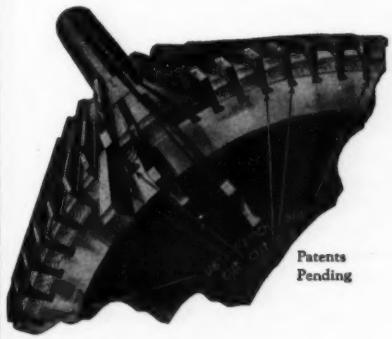
Mr. and Mrs. Metcalf will spend the Winter at St. Petersburg, Fla., and return to their summer home at St. Donat De Montcalm in the Laurenthian Mountains, where they are expected to remain during the summer months.



No. 1 EMERSON JORDAN now equipped with the BOLTON BANDLESS PLUG

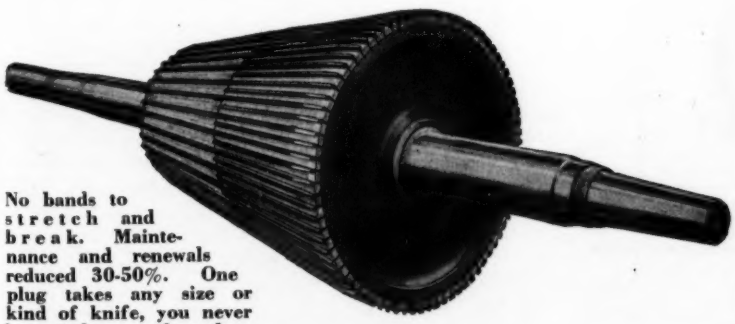
LOWER operating costs, fewer shutdowns for replacement of knives, increased tonnage,—these are a few of the advantages mills have obtained by installing the new No. 1 Emerson Jordan equipped with the Bolton Inverted Wedge Type Plug and Timken Roller Bearings.

The advanced design and construction of Emerson Jordans make them the most efficient and dependable engines you can install in your machine room. Ask us to show you what they can save you. Bulletin or estimate?



Patents Pending

Section showing the construction of the Bolton Inverted Wedge Plug. Wedge woods larger at bottom than at top, knives lock-slotted entire length of plug; woods or knives cannot work loose. Chipping does not weaken support of knives. Wedges and knives are driven in from end, easily and quickly replaced when necessary.



No bands to stretch and break. Maintenance and renewals reduced 30-50%. One plug takes any size or kind of knife, you never have to buy another plug.

BOLTON QUALITY

The EMERSON MANUFACTURING COMPANY

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DIVISION OF JOHN W. BOLTON & SONS, Inc.

POWER PLANT SECTION

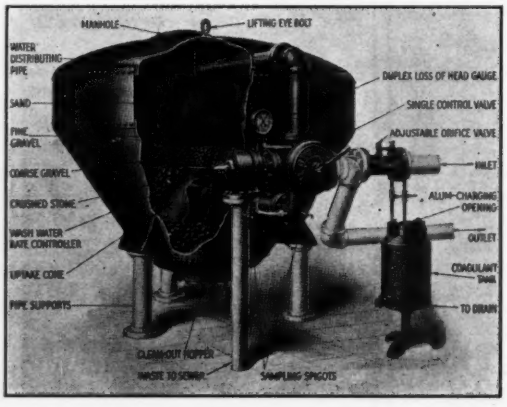
REDUCING POWER COSTS THROUGH UNIT TREATMENT

Conducted by Reginald Trautschold Consulting Engineer

Good Filtration Pays in Many Ways

Raises Market Values and Reduces Operating Costs

It is the fact that pulp in itself is one of the very best of filters that makes the filtration process such a complex and important operation in pulp and paper making, if quality product at low cost is to be attained. Unless the water used is literally crystal-clear and clean, a deposit within the pulp results and the production of uniform shades of stock, either white or colored, simply cannot be affected and, thus, the market value of the mill's output is materially lowered. Similarly, the use of such unsatisfactory water supply for boiler feed purposes, even though some further water conditioning is undertaken, is also the chief cause of high steam costs and heavy boiler room maintenance expense. In short, from almost every angle involving expense, an abundant supply of clean, clear water is dominating consideration in the successful and profitable operation of pulp and paper mills.



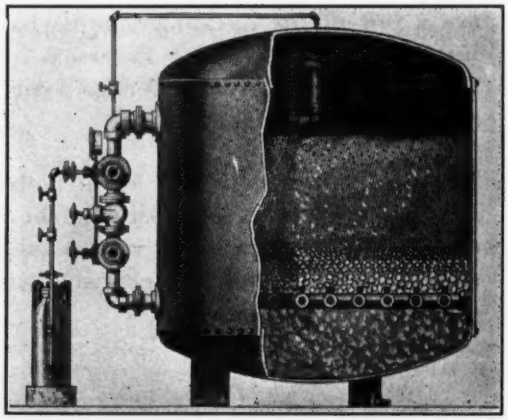
Courtesy: Cochrane Corp.

FIG. 1.

Conical type, pressure sand filter with full complement of accessories, controls and coagulant feeder.

The need of a plentiful water supply close to where raw paper making materials abound or at locations to which such essential supplies can be cheaply and readily transported is the chief consideration, naturally, which leads to the customary location of mills on or near streams or large bodies of water. Satisfactory quantities of surface water are generally available, for the most part relatively soft and during much of the year comparatively low in turpidity and in matter carried in suspension. From the viewpoint of the water being satisfactory for mill use, however, it is very apt to be quite high in color, due to the presence of decayed vegetable and organic matter, and during spring freshets and periods of heavy rainfall to carry considerable mud, silt, etc. The water supply may also be contaminated with the waste from other mills and the refuse from industrial plants of all kinds.

Such pollution must be overcome so far as possible for a satisfactory water supply for the mill, to attain output commanding a satisfactory price, and for boiler use, to attain low steam costs and realize low operating expenses. Incidentally, the higher the pressure at which the steam is generated the more important becomes the purity of the water employed for boiler feed. With the really high pressures at which steam is now generated in several of the new power plants serving pulp and paper mills, absolutely pure water is virtually essential.

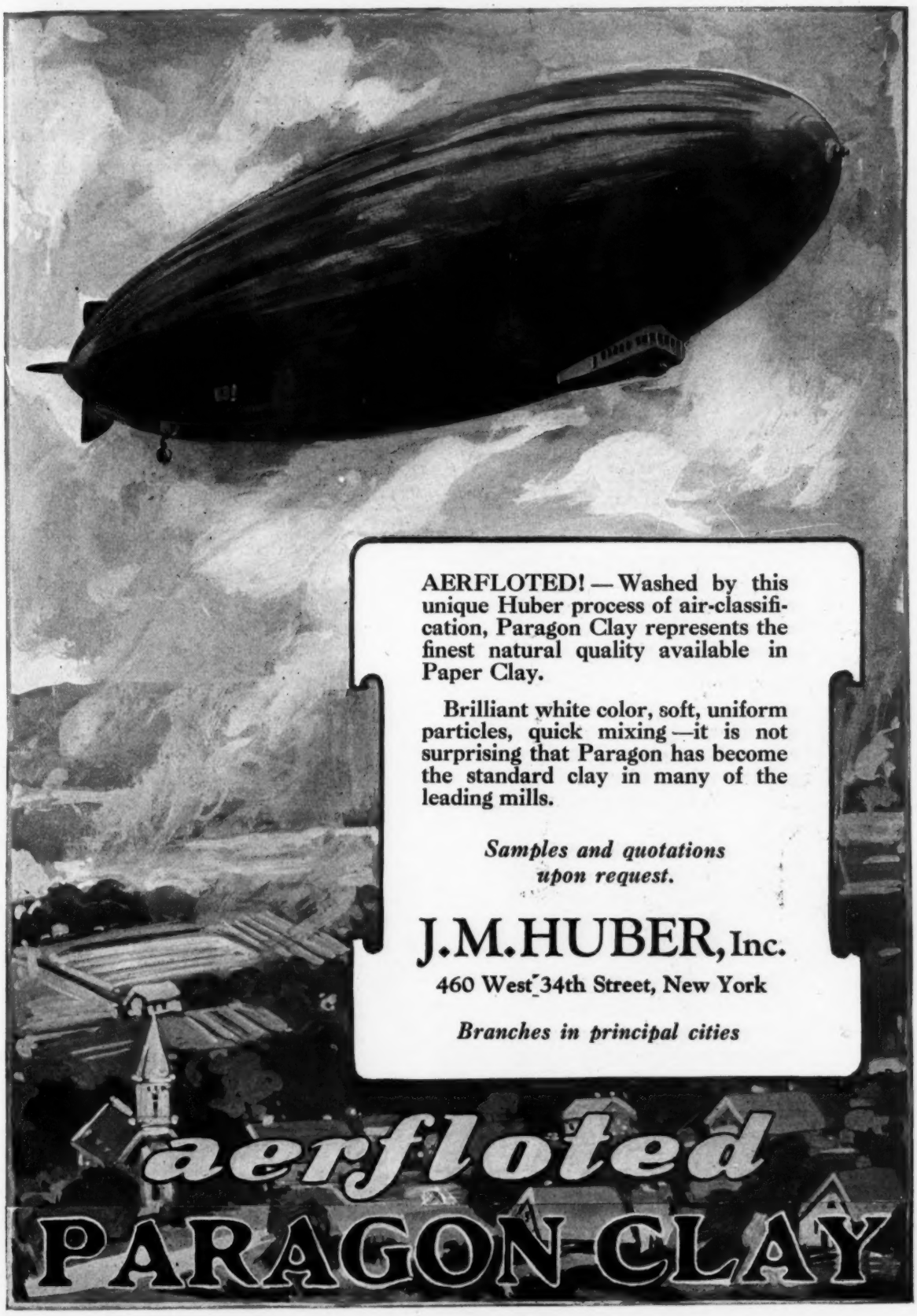


Courtesy: Paige-Jones Chemical Co., Inc.

FIG. 2.

Vertical type, pressure sand filter with coagulant feeder.

The removal of the suspended matter in the water supply is a filtration task, a simple operation entailing the use of no very complicated equipment and one which can be very efficiently discharged. The very efficacy with which it can be consummated, in truth, leads in no small measure to many of the not at all uncommon filtration failures. The filter in most such cases is simply given more to do than it can accomplish without excessively frequent cleansings and the waste of large volumes of wash water. The more efficient a filter, the more rapidly does mud, silt and other impurities entrained in the raw water collect on and in


AERFLOTED! — Washed by this unique Huber process of air-classification, Paragon Clay represents the finest natural quality available in Paper Clay.
Brilliant white color, soft, uniform particles, quick mixing — it is not surprising that Paragon has become the standard clay in many of the leading mills.
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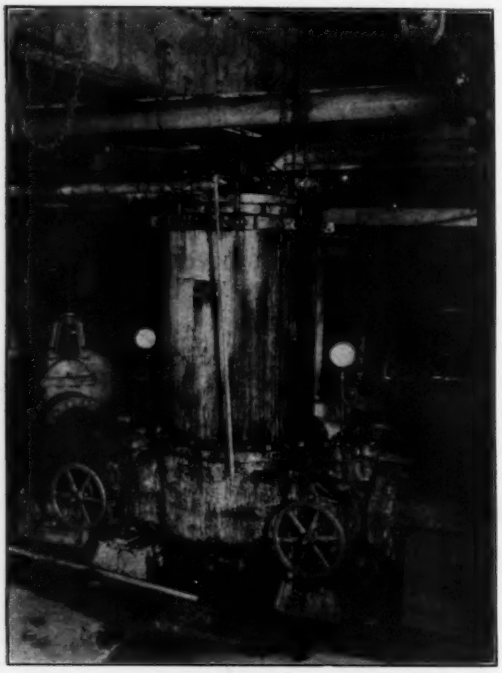
the filter bed, destroying its capacity and in time its ability to exercise its function. This is particularly true when employing the more porous of filtering mediums, which frequently show excellent results on tests, or even in practical operation when cleaned sufficiently often.

Sedimentation and Coagulation

Filter fouling takes place in direct proportion to the amount of suspended matter in the raw water and the amount of such water passes through the filters, so where large and constant supplies of filtered water are required, as in mill service, the first requisite for an economical and successful filtration plant is to remove by sedimentation all the suspended matter that will precipitate within a reasonable time. Frequently, it is advisable to resort to coagulation, prior to sedimentation in the preliminary treatment of the raw water. The addition of a suitable coagulant greatly stimulates and hastens sedimentation and facilitates filtration.

Efficient sedimentation, preceded by proper coagulation, will frequently deposit from 50 to 90 per cent of the impurities in the sedimentation tank. The filters, as a result, are relieved of just so much work and very substantial savings are realized through the conservation of the large quantities of filtered water which otherwise would have to be employed for cleansing satisfactorily the overworked filters. Filtration following such preliminary treatment can be sonsummated rapidly and most efficiently and the resulting clarified effluent freed of all iron, whether in suspension or in solution, as well as of all substances in suspension.

The suitable pre-treatment of water will vary, of course, with



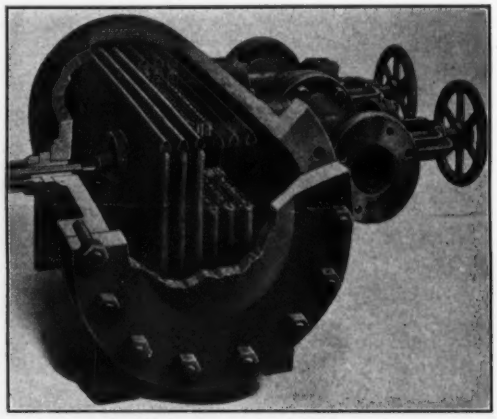
Courtesy: Elliott Co.

FIG. 3.

Low pressure, cylindrical (cloth) filter instaled in wash line to paper machine in mill of the Falulah Paper Co., Fitchburg, Mass.

the kind and amount of impurities in suspension in the raw water, making the filtered water problem for each mill more or less special and specific. However, when the preliminary treatment and sedimentation are properly handled, the water after filtration is in a condition permitting all production processes to be brought to a closely uniform standard. One which will virtually eliminate the irregularities that occur in mill output when using water drawn directly from the source of supply, which is always subject to seasonal variations and liklihood of pollution.

Quite generally, the chief impurities to be removed by filtration consist of various quantities of suspended matter in the water, particularly the coloring matter, but there are also numerour water supplies which contain large amounts of carbonates of calcium and magnesium in solution which cause considerable trouble, due to the formation of precipitates in sizing and



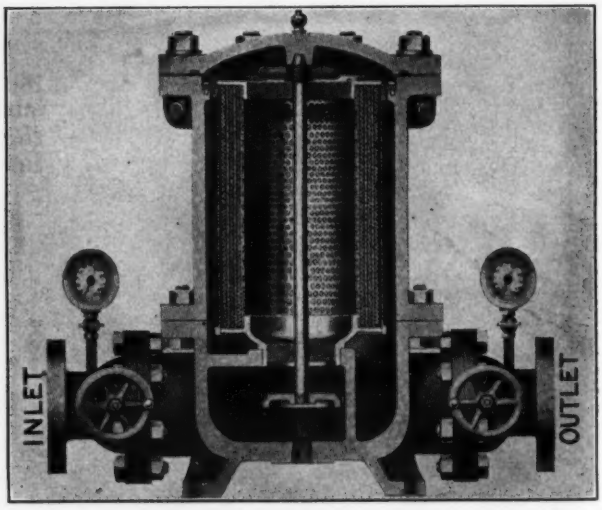
Courtesy: The Griscom-Russell Co.

FIG. 4.

Multi-screen, flat cartridge type filter, successfully applied to low and moderate capacity filtration services in paper mills.

coloring. The reduction in the temporary hardness in the water is then involved, as well as the removal of the iron and suspended matter.

Organic matter in solution may also be the cause of much additional annoyance, for certain kinds of organic substances



Courtesy: Elliott Co.

FIG. 5.

Sectional view of high-pressure filter and grease extractor.

contain mould spores which will develop in the finished and stored paper, chemical treatment of pulp apparently failing to destroy mould spores. Other organic substances, which the chemical treatment of pulp also fails to remove, or combat, successfully, nourish mould spores deposited from the atmosphere. The purification and sterilization of the mill water supply is the only remedy which will insure a product that will remain free from mould and odor over long periods of paper storage.

These complexities and difficulties, as well as many others

Consistently CLEAN Pulp

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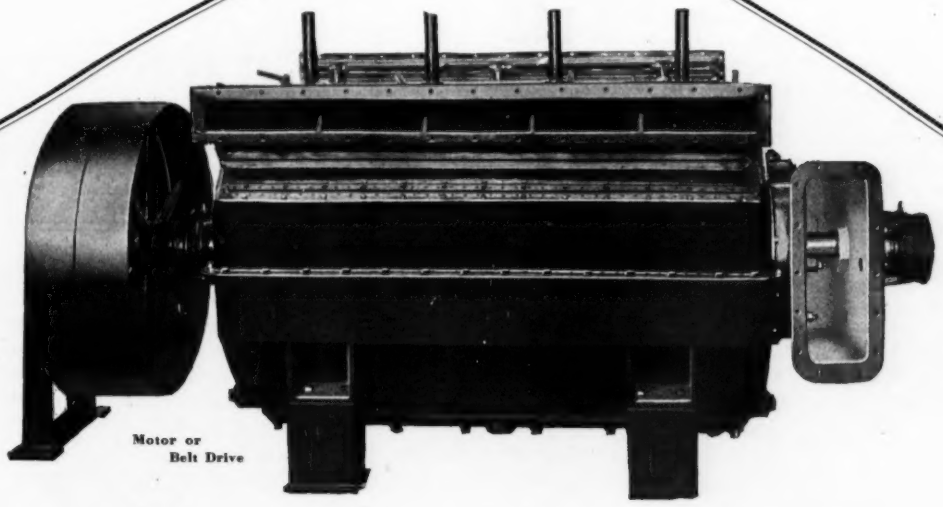

Motor or Belt Drive

There is no question that the rotary type screen is the ideal principle for screening sulphite and sulphate pulp.

The factors of lower maintenance cost . . . . less power . . . . less floor space . . . . elimination of leakage and overflow . . . . quieter operation . . . . greater capacity, etc. . . . are all self-evident.

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which develop in connection with individual installations, are mentioned simply to emphasize the absolute necessity of efficient preparation of water by proper coagulation and adequate sedimentation before passing it through the filters. At least in those cases where more direct filtration methods have proved more or less failures. Such preliminary treatment has been found to constitute a highly important step in many successful and economical filtration systems, where chemical, physical and mechanical means, all, have had to be employed to secure satisfactory results.

Various Substances Can Be Used

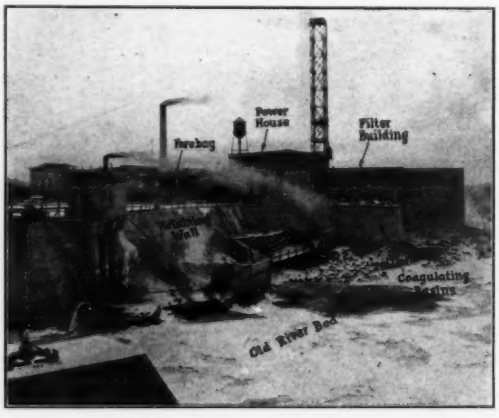
Various substances can be used for the coagulant which, enmeshing the finely divided suspended particles of mud, silt and other impurities, precipitates them in the sedimentation tank or if sufficient time does not elapse for complete sedimentation, deposits the accumulation on the filter bed. One of the most commonly used substances, however, is aluminum sulphate, for any water having an alkalinity, *i.e.*, containing soda, lime or magnesia as carbonate, readly decomposes such substance and forms an insoluble aluminum hydroxide. The accumulation of such stable hydroxide, furthermore, forms a blanket on the filter bed which serves to assist in obtaining proper clarification and organic purification of the water.

If the water is at all acid, neutral or even of low alkalinity, it becomes necessary to add a reagent to bring about a condition of alkalinity sufficiently high as to develop enough coagulation to effect satisfactory purification of the water by filtration. A sodium compound, such as a hydroxide or carbonate, should be employed for such purpose, rather than lime, for if the latter is used harder water results.

The sodium compounds do not have such effect and if the aluminum coagulant is properly handled the nature of the hardness is simply changed or decreased.

Filters and Filtration

As an efficient filter bed necessarily becomes coated with the suspended material intercepted, the provisions for filter cleaning are of prime importance and the selection of a suitable filtering medium also requires careful consideration. Where large volumes of water have to be filtered, the cheapest and probably the best filtering medium to employ is a sand bed, consisting of grains suitably graded and sized, supported on a mattress of coarser gravel. To expedite filtration, such filter bed placed in a tight, enclosed filter shell, or casing, permitting the water to be passed through the bed under pressure. Ordinarily, or quite commonly, the apparatus for proportioning and feeding the coagulant forms some component part of the filter equipment, the operation of which should be discharged with the utmost accuracy and reliability, and of course, adequate facilities are essential for efficient back washing to insure effective filter cleansing. Air agitation is sometimes also employed.

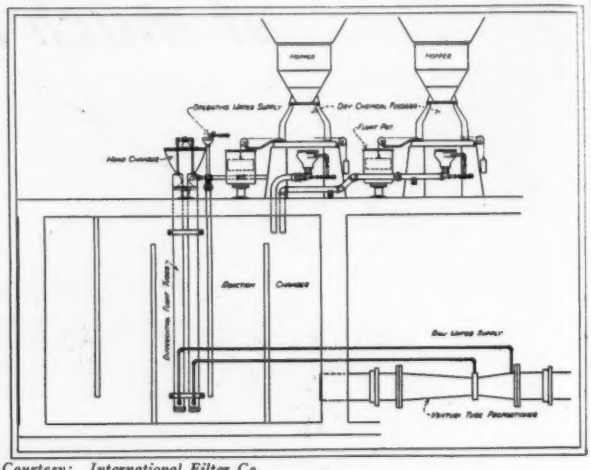


Courtesy: International Filter Co.

FIG. 6.

New filtration plant at the Consolidated Water Power and Paper Co.'s Biron, Wis., paper mill, having capacity of 5,000,000 gallons per day.

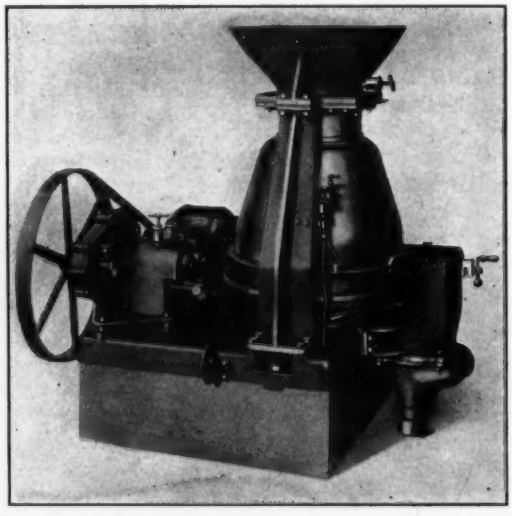
Where the advantages to be derived, and they are very pronounced, from sedimentation following coagulation can be effectively utilized, the coagulant feeder may be made an independent unit, operating in coordination with the speed of filtration, but located at and serving a "reaction chamber" quite removed from the filters proper. From such chamber, the water customarily passes to a large basin where the processes of coagulation and sedimentation are consummated. These chambers and basins are so proportioned that at normal rates of filtration a retention period of several hours duration is provided, during which the precipitation prior to filtration takes place.



Courtesy: International Filter Co.

FIG. 7.

Layout of chemical feeding equipment at filtration plant of the Cornstalk Products Co., Inc., Danville, Ill.

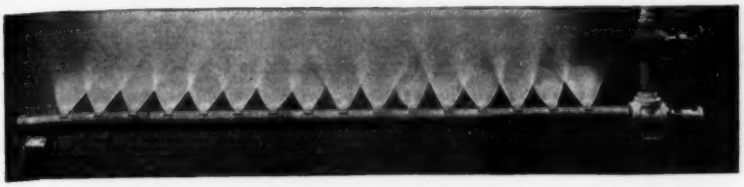


Courtesy: International Filter Co.

FIG. 8.

Dry chemical feeder for accurate proportioning of coagulant feed.

Low-pressure filtration on a smaller scale, say up to 1,000 gallons per minute, is also an important operation in mill service, as, for instance, in connection with water clarification in the water wash line to the paper machine. In such services, filters of other than the pressure sand type can frequently be used satis-



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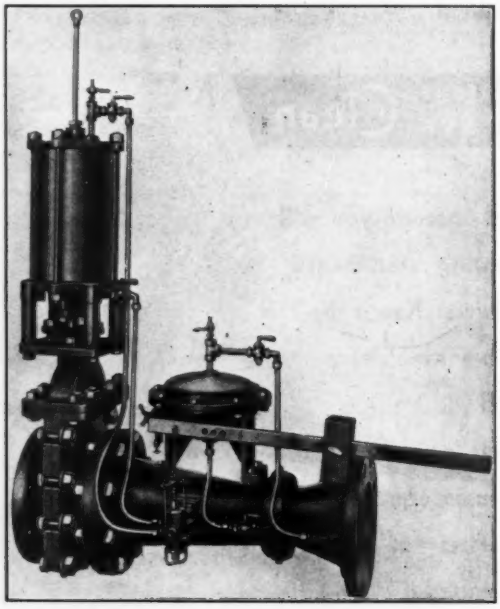
factorily, since simply a limited filtering proposition is entailed. Suitable equipment, designed for straining and filtering-out the suspended matter in the water, frequently employs terry or filter cloth as the functioning medium made up in the form of removable cartridges, usually of cylindrical, hollow-spool shape though in some types of such filters a series of removable flat screens are used, through which the water passes under low or moderate pressure and is clarified. These filters have been found quite satisfactory in removing solids, even liquids, from water in which the foreign matter is not actually dissolved.

Feed Water Filtration

Highly important filtration problems are entailed, quite obviously, in connection with the purification of boiler feed water supplies, the reclamation of condensed exhaust from power units, pumps and other steam operated equipment and piping for boiler feed purposes, etc., but these will be touched upon only briefly, for they entail or are closely associated with matters pertaining more intimately to water conditioning for boiler service, the many problems of which will be taken up more fully in subsequent discussions. However, the cost of the damage occasioned by oil, grease, organic matter, sediment and scale forming material carried into the boiler; such as waste of fuel, weakening of boiler shell, tube ruptures, lowering of boiler efficiency, foaming and other pronounced evils; is so great that a few brief remarks concerning the use of pressure filters and grease extractors in the boiler plant are well warranted, even here.

Great quantities of condensed exhaust and hot water supplies are not uncommonly wasted largely because they have become contaminated with oil and grease, a very costly habit, and, of course,



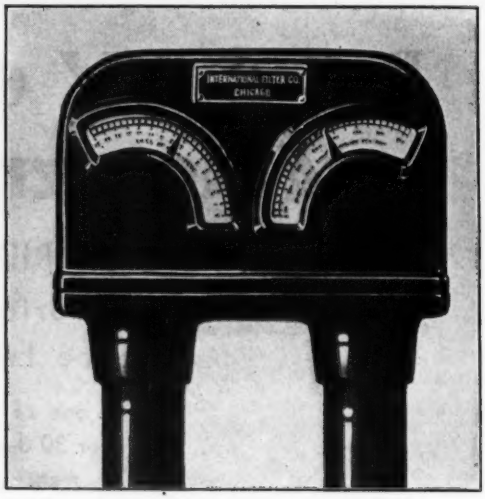
Courtesy: International Filter Co.

FIG. 9.

Efficient rate of flow controller for filter effluent.

many mill power plants still use water drawn from lakes, rivers or wells for boiler feed, raw water which always contains more or less organic matter and finely divided sediment in mechanical suspension. Sand filters and the other types of low pressure filters already mentoned can be utilized to remove much of such damage causing impurities, but the complete extraction of oil and grease presents unusual difficulties. Of course, if the oil is present only in the free state, rising and floating on the surface of the condensate, it can be disposed of without much trouble, but if it is also present in the form of emulsion a suitable coagulating agent should be employed.

The desirability of complete extraction of oil and grease is due to the fact that oil probably can cause more damage in proportion to its bulk than any other substance liable to be carried into the boiler with the feed water. Oil will form a film of highly efficient heat insulation over the entire inner surface of the boiler and



Courtesy: International Filter Co.

FIG. 10.

Mercury type gage for indicating loss of head and rate of filter effluent.

oil and grease will combine with scale forming materials to create a very tenacious and serious scale which can be removed only with much difficulty.

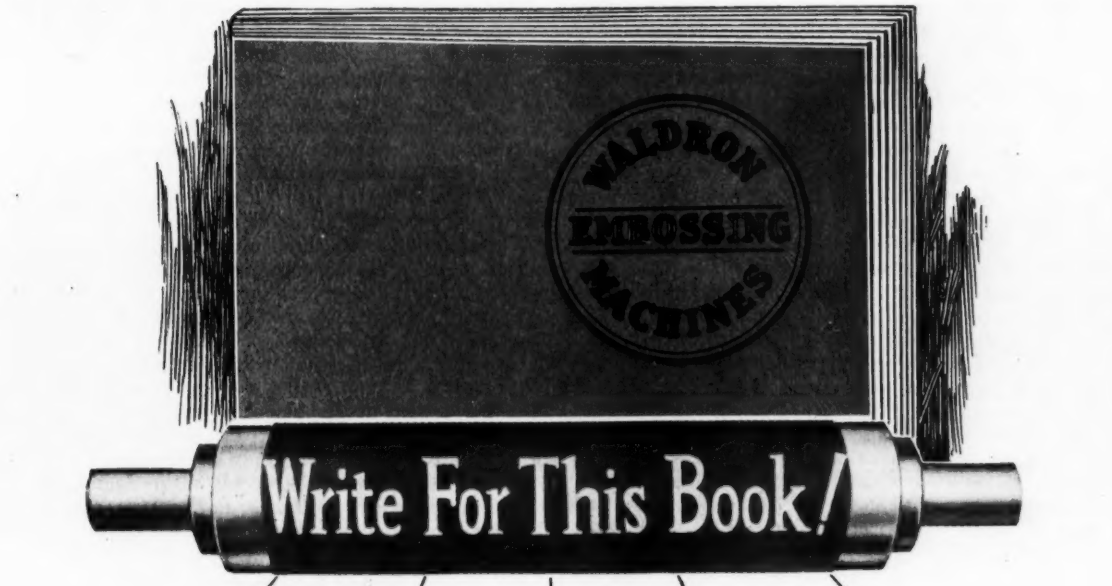
Of course, the most efficacious manner of preventing oil contamination of the exhaust is the separation of the entrained oil from the steam, by means of an efficient oil separator, before condensation occurs, but this is not always practical or feasible. The use of modern high-pressure filter and grease extractors, moreover, have proved very successful in ridding the condensed steam boiler feed of free oil and grease and in filtering out the suspended scale forming sediments and corrosive organic matter. Such filters employ cloth cartridges made up of individual layers of terry cloth, so arranged that the condensate supply passes through and is filtered by each of the several separate layers in turn before it can escape from the filter.

These high-pressure filters and grease extractors are also highly valuable units in connection with the purification of water used for cooling service, as in the glands of steam turbines and in the coils of water-cooled transformers. The deposition of a heat insulating oil film and the precipitation of fine sediment and scale in the necessarily restricted water passages seriously interfere with the transfer of heat and may even readily clog the passages sufficiently to cause a serious mishap.

Efficient Filtration System[1]

So far as the requirements for an efficient filtration system for mill service are concerned, the advance which has been made is quite marked and is perhaps best shown by direct reference to a recent installation of note, an excellent example being the just completed installation of the Consolidated Water, Power and Paper Company at its mill at Biron, Wis. Incidentally, this new filter plant incorporates the refinements and practices found eminently successful by the same company through its experience with a modern and well equipped filtration plant at its Wisconsin

[1] Extracted from notes compiled by H. B. Crane, Prin. Asst. Engr., International Filter Co., Chicago.



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The Biron filter plant is in a number of ways an unique installation, being built on the shore, below a dam and adjacent to a fore bay from which it is separated by a heavy fetaining wall, the fore bay providing a head for the operation of the company's hydro-electric plant. The retaining wall forms one side of the filter building and coagulating basin and it is unnecessary to pump the raw water to the filter building, the head available from the fore bay sufficing for all filtering operation.

The plant handles some five million gallons of river water daily when the filter beds are operated at the normal rate of 2 gallons per hour per square foot of filter area, the water entering the reaction chambers from the fore bay through a 16-inch pipe. This pipe is valved so that the water may be deflected directly to the coagulating basins in any emergency. The reaction chambers, two in number, are so arranged as to operate in series and are provided with motor driven agitators.

Upon leaving the reaction chambers, the water can be distributed to either or both of the coagulating basins, where it flows to one end of the basin and is then returned around a baffle wall to an influent conduit running the length of the pipe gallery and from which the water is distributed to the various filters. The combined retention period provided in reaction chambers and coagulating basins is a matter of four and a half hours, when the filters are operating at normal rate, during which period sedimentation becomes well advanced.

The four filters have a combined superficial sand area of 1,776 square feet and are divided down the center by an influent and waste flume, under which lies an underground manifold, or header, such arrangement requiring somewhat shorter wash water troughs than filters of like dimensions with troughs placed parallel to the center line. The filter beds consist of 27 inches of fine sand, effective size approximately 0.40 millimeters and a uniformity coefficient of about 1.6, supported on 16 inches of filter gravel graded in four layers, the gravel covering the filter underdrain. The filters are designed for high-velocity water wash, filtered water for such purpose being supplied from the clear well by a suitable pump, while the filter effluent lines are equipped with venturi type rate-of-flow controllers, the lines terminating with water seals in a clear well located below the filters and pipe gallery.

A total of up to 12-foot head is available for operating the filters, depending upon the level of the water in the clear well below the filters, and hydraulically operated filter valves are provided, controlled from individual hydraulic valve stands on the operating floor. These stands are equipped with operating levers with valve opening indicators, which are connected to fourway cocks attached to the pressure and waste headers in the pipe gallery below, and a mercury type gauge to indicate loss of head and rate of flow is installed on each filter.

The coagulant employed, filter alum, is fed into the first reaction chamber by a dry feed machine, a small quantity of sulphuric acid solution also being fed to the first reaction chamber from an orifice box to effect a lowering of the hydrogen ion content of the raw water. This special treatment is resorted to for the reason that previous experience with Wisconsin River water has shown that satisfactory coagulation can be effected with considerably less alum when the hydrogen ion content of the water supply has been treated in this manner.

Such is a very sketchy description and outline of operations at the most recent and one of the most efficient filtration plants built to serve a large paper mill, though it is not the sole example of this type of filtration service to paper mills. Much the same system has been recently installed for the Cornstalk Products Company, Inc., at Danville, Ill., for instance, where raw water from the north fork of the Vermillion River is converted into a clear, colorless effluent of high quality. Gravity filter units with a total sand area of 1,200 square feet are used at this plant, with underdrains designed for high-velocity water wash, filtered water from the clear well being supplied by an efficient backwash pump for such operation. Dry feed machines are also employed to supply coagulant, under automatic variable rate control, in proportion to the quantity of raw water entering the reaction chamber. In this case, they are employed because it is difficult to maintain a constant delivery from the raw water supply pumps located at the river. Sensitive regulation of coagulant feed is effective by translating into motion the differential head from a venturi tube in the raw water supply line and utilizing the movement to operate control cams on the dry feeders.

These more elaborate filtrations are mentioned in order to focus attention on the consideration given to the problems entailed in efficient water filtration and purification for mill processes by progressive concerns, paying close attention to market demands for quality output and to economies in mill operation. Though quite considerable investment was doubtless entailed in building these modern filtration systems, the capital used could hardly have been put to more profitable use, for experiences elsewhere have pretty well demonstrated the fact that an efficient filtration system with suitable provisions for proper conditioning of water supplies for both mill and power plant services will frequently yield a return on the money invested of from 25 to 75 per cent. per annum. In addition, good filtration pays in many other ways.

James L. Lawrence Dead

DAYTON, Ohio, January 7, 1930.—James L. Lawrence, 82 years old, 700 South Main street, president of the Lawrence Bag Company and the Raymond Bag Company and vice-president of the Wardlow-Thomas Paper Company, of Middletown, died at City Hospital, Middletown, this morning, following an illness of three weeks.

Mr. Lawrence was born in Picton, Ont., August 26, 1847, and came to the United States in 1869, settling in Pittstown, N. Y. He was married the same year and came to Middletown soon after his marriage. Mr. Lawrence lost his first wife in July, 1919, and was married again in October, 1920.

Since coming to Middletown, Mr. Lawrence had been active in local business affairs, being a director of the Middletown Building and Loan Deposit Association, and president of the association for many years. He was also superintendent and president of the Wardlow-Thomas Paper Company for more than forty years.

Mr. Lawrence organized the Raymond Bag Company in 1910 and had been president and director of the company since. The Lawrence Bag Company was organized by him in 1920 and he has been president and director of that company since that time.

He was an active member of the First Baptist Church and belonged to the Masonic Lodge. He had been active in business and social affairs until the time of his recent illness.

Besides his widow, Mrs. Caroline Lawrence, he is survived by six children: W. H. Lawrence, of New York City; Mrs. Sarah Kemp, of Denver, Col.; Mrs. G. O. Michael, of Poasttown; W. F. Lawrence, of Middletown, and Mrs. E. O. Bauer, also of Middletown; H. F. Lawrence, of Philadelphia; two brothers, one sister, seven grand children and six great grand children.

When Mr. Lawrence first came to Middletown he was associated with the Hill Paper Company, later known as the Sorg Paper Company, of which he was vice-president for a period of 40 years.

Funeral services were conducted Saturday, January 4, at his late residence, the services being in charge of the Rev. A. S. Stiles. Burial was made in Woodside cemetery. Many of Mr. Lawrence's associates in trade attended the final rites.

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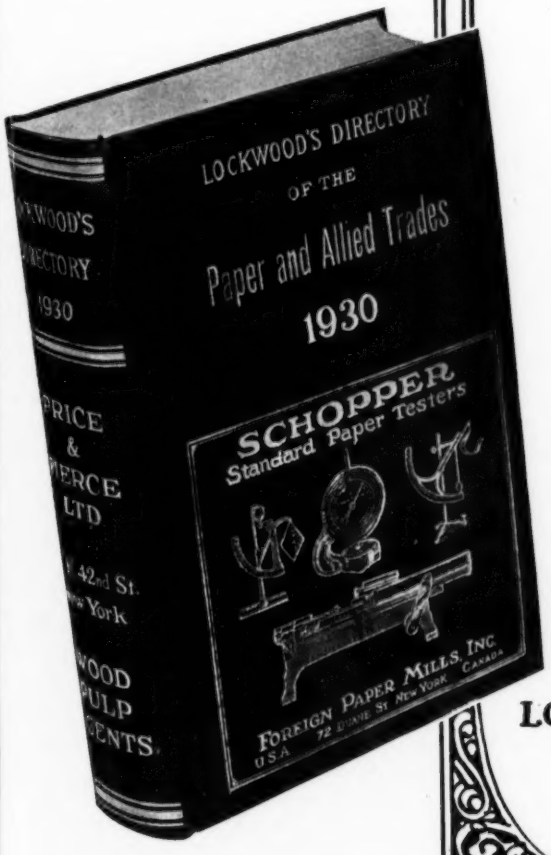

CONTENTS

Entire contents classified under separate headings for the United States and Canada, alphabetically and geographically arranged by states.

- City Addresses of Mills and Mill Supply Houses
- Classified List of Paper Mill Products
- Classified List of Pulp Mill Products
- Coated Paper Manufacturers
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Vol. XC New York, January 9, 1930 No. 2

COMING EVENTS

American Paper and Pulp Association, fifty-third Convention and Meeting. Pennsylvania Hotel, February 17-20. Annual Meeting, Thursday, February 20. Annual Banquet, Grand Ball Room, Thursday, February 20.

National Paper Trade Association of the United States. Convention. Pennsylvania Hotel, February 17-19. Theatre Party, "Sons of Guns," Imperial Theatre; Supper-Dance, Hotel Astor, Wednesday, February 19.

Technical Association of the Pulp and Paper Industry. Convention, Pennsylvania Hotel, February 18-20.

Salesmen's Association of the Paper Industry. Annual Meeting, Pennsylvania Hotel, Tuesday, February 18. Luncheon, Tuesday, February 18.

New York Association of Dealers in Paper Mills' Supplies, Annual Banquet, Hotel Commodore, Wednesday, February 19.

Canadian Pulp and Paper Association. Annual Meeting, Pulp and Paper Research Institute, Montreal, January 31. Annual Dinner, Ritz Carlton Hotel, Montreal, January 31. Woodlands Section, Pulp and Paper Research Institute, Montreal, January 27-28. Technical Section, Engineering Institute, Montreal, January 29-30.

INSTITUTE OF PAPER CHEMISTRY

The opening of the Institute of Paper Chemistry at Lawrence College, Appleton, Wis. in February is an event of decided importance. Representative paper men, in fact, are of the impression that as time goes along it will be appreciated that it marked the dawn of a new era in paper technology on the North American continent. The new school will be similar to but one institution in the world, the famous papermaking school at Darmstadt, Germany.

The school is governed by a board of trustees comprising the leading executives in the various pulp and paper companies lending their support. Officers of the board are president, Ernest Mahler, of the Kimberly-Clark Corporation, Neenah; vice president, D. Clark Everest, of the Marathon Paper Mills, Rothschild, Dr. H. M. Wriston, president of Lawrence College, secretary and director of the Institute; R. J. Watts, business manager of the college, treasurer of the board; and Westbrook Steele executive secretary.

The board of trustees includes in addition to Mr. Mahler, Mr. Everest and Mr. Wriston, Hugh Strange of the John Strange Paper Company, Neenah; Monroe A. Wertheimer, of the Thilmany Pulp and Paper Company, Kaukauna; D. K. Brown, of the Neenah Paper Company; and L. M. Alexander, of the Nekoosa-Edwards Paper Company, Port Edwards.

The location of the Institute in Appleton is singularly fortunate. It has made possible an affiliation with Lawrence College. This is an institution, now over eighty years old, which has a long tradition of sound scholastic standards, and which in recent years has made extraordinary advances to prominence in the educational world. By being affiliated with Lawrence College, the Institute will have the benefit of its administrative guidance, its equipment and facilities, and its esablished academic procedures.

Appleton is a strategic location in still another respect, in that within a seven-mile radius of the city, there is nearly every type of paper and pulp manufacture, as well as many of the more prominent lines of paper conversion. It is almost unique in the United States in this respect. It would be impossible to find any similar compact area with such a wide diversity of paper manufacture. In additional, much paper mill machinery and equipment is made in immediate proximity to Appleton, and the manufactures of this type of material have already begun to supply the Institute with standard equipment. Access to the illustrative material available by reason of these manufacuring plants is already assured to the students in the Institute, and in many of them summer employment will be available, so that students will have opportunity for practical experience and remunerative employment.

There is a third benefit which flows from the location. The Institute will draw upon the experts now employed by the several manufacturing companies in this area. It is one of the fundamental features of the plans for the Institute of Paper Chemistry to have as members of its staff the highly trained men who have the practical experience which has come from years of service in manufacturing enterprises of this region. They will come into the Institute not only as special lecturers upon their individual fields of greatest proficiency, but will also be available for the tutorial guidance of students in the Institute who wish to specialize in their work.

The Institute will open at the beginning of the second semester of this academic year, Monday, February 3, 1930. Courses will be organized leading to the degree of Master of Science. As soon as qualified students are ready for more advanced work, research facilities have been provided so that the degree of doctor of philosophy will be granted.

Dr. Otto Kress has been appointed the technical director of the Institute. His long experience and successful research in problems connected with paper making, as well as his demonstrated teaching ability, will be at the service of the students. His broad acquaintance and recognized standing assure the graduates of the most favorable opportunities for positions.

A group of individuals interested in the project have provided funds for the establishment and maintenance of a special library. It it planned to have the largest and most completely available library in this field to be found in the country.

Tuition is at the rate of two hundred dollars a year. This includes all laboratory fees. There are a limited number of scholarships available to students of unusual ability. Two fellowships have also been established. Each carries a stipend of five hundred dollars a year. They will be assigned to students of distinctly exceptional capacity.

The requirements for admission are a bachelor's degree with a major in chemistry and a satisfactory personal interview. In cases where distance or other circumstances make such an interview impracticable, letters of recommendation and other evidences of character, competence, and industry will be accepted.

Inquiries should be addressed to the Director of the Institute of Paper Chemistry, Appleton, Wis.

A CENTURY OF PROGRESS IN SCIENCE

All national associations representing the chemical industries have been asked to collaborate with the Chemical Engineering Committee of the Chicago Century of Progress celebration in 1933 in the development of plans for a chemical engineering exhibit. The Chemical Engineering Committee is being formed by Dr. Alfred H. White, head of the department of chemical engineering at the University of Michigan.

The committee is to be composed largely of members ot national associations. Those already appointed are Stanley Krall of the Rubber Manufacturers Association; H. J. Rose and R. B. Harper, American Gas Association; R. G. Macdonald and W. G. MacNaughton, Technical Association of the Pulp and Paper Industry; S. H. Wilder, Manufacturing Chemists Association of the United States; Crosby Field, American Society of Refrigerating Engineers; William G. Schneider, Copper and Brass Research Association, and R. A. Plumb, American Paint and Varnish Manufacturers.

Other organizations which it is expected will be represented are the Tanners' Council of America, the Synthetic Organic Chemical Manufacturers Association, National Fertilizers Association, Hawaiian Sugar Planters Association, American Association of Textile Chemists and Colorists, the Rayon Manufacturers Association and the Wood Distillation Association.

The chemical engineering exhibit at the Chicago fair is to be part of a comprehensive science theme that is being worked out by the National Research Council's Science Advisory Committee. The science theme will depict a century of progress in all the sciences. The Chemical Engineering Committee is one of thirty-five committees, each representing a separate field of scientific achievement, all of whom are acting under the auspices of the Science Advisory Committee.

The committee for the pulp and paper industry consists of: Allen Abrams, Technical Director, Marathon Paper Mills Company, Rothschild, Wis., Chairman; R. A. Hayward, manager, Kalamazoo Vegetable Parchment Company, Kalamazoo, Mich; W. G. MacNaughton, International Paper Company, 100 East 42nd Street, New York City; H. G. Ingraham, V. D. Simons, Inc., 435 N. Michigan Avenue, Chicago, Ill.

Dr. White's committee held its first meeting at the Chemists Club, 52 East 41st street, New York City on December 6. The meeting was devoted to an explanation of the exhibit methods contemplated by the Science Advisory Committee and general outlines of suggestions as to how a hundred years of progress in the various branches of chemical engineering can be most effectively portrayed at the Chicago fair.

The exhibit possibilities are now being studied by the members of Dr. White's committee with the assistance of groups of technical men from each of the associations represented on the committee. These technical groups of sub-committees will make reports containing definite suggestions as to exhibits which will be acted upon at a meeting of the Chemical Engineering Committee to be held at the Chemists Club in New York on January 16.

TAPPI Notes

George A. Ritter, formerly chemist for the Parker-Young Company, Lincoln, N. H., has taken a position as chemist at the Foster Box Board Company, Utica, N. Y.

John F. Ohlson who for the past year has been the TAPPI American-Scandinavian Fellow at Holmens Bruks A/B in Sweden, has taken a position with the New Brunswick International Paper Company at Dalhousie, N. B.

J. V. B. Cox of the Kalamazoo Division of the Paper Makers Chemical Corporation has been transferred to the Portland, Oregon, Division of the same company.

Sakari Koivulehto, a chemical engineer, who has recently come to America from Finland, has taken a position as chemist in the laboratory of the Castanea Paper Company, Johnsonburg, Pa.

B. S. Summers, consulting engineer of Chicago, Ill., was a visitor at the Technical Association office this week.

D. E. Cable, assistant director of research for the Oxford Paper Company, Rumford, Maine, was married during the Christmas Holidays to Miss Katherine Niven of Brooklyn, N. Y.

G. J. Brabender has resigned as instructor in the Wisconsin Vocational School and has taken a position on the research staff of the Marathon Paper Mills Company.

Ivar Lundbeck who has been technical director for the Thilmany Pulp and Paper Company, sailed for Sweden this week to take a position of superintendent of the Moloch Domsjo mill at Ornskoldcvik.

D. Lake, treasurer of the Paper and Textile Machinery Company of Sandusky, Ohio, was a visitor at the TAPPI office this week.

Paul Hodgdon of the Munising Paper Company, Munising, Mich., was in New York on Tuesday.

Walter Wiitman who has been working for the past year at the Camas mill of the Crown-Willamette Paper Company, sailed Saturday for Finland where he will take a position as technical manager of the Kotka mill of the Lojo Cellulosa Fabriks A/B.

Carl A. Cajanus is now resident engineer at the Menasha plant of the Marathon Paper Mills Company, Menasha, Wis.

Tore H. Nilsson who was formerly the TAPPI American-Scandinavian Foundation Fellow at Bogalusa Paper Company, in Louisiana, is now chemical engineer at Billeruds A/B in Saffle, Sweden.

Representing the newly organized Pacific Coast Section of TAPPI, the following are planning to attend the annual meeting of the national body in New York in February: Professor H. K. Benson, secretary of the Section and head of the chemical engineering department of the University of Washington; Charles H. Newhall, consulting engineer of Seattle, Wash., and Arthur B. Green, consulting engineer of Portland, Ore.

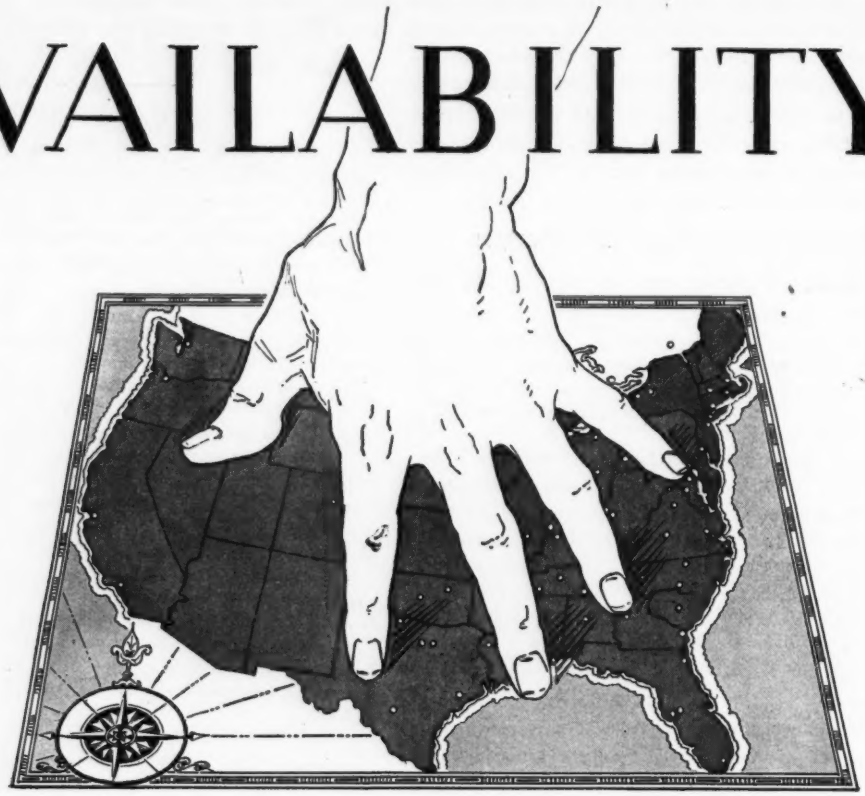
Paper Mill Employment Decreases

Both employment and payrolls decreased in the paper and pulp industry in November compared with the previous month, while employment increased in the paper box industry but payrolls decreased according to the Bureau of Labor Statistics, Department of Labor, at Washington, D. C.

Reports were received by the Bureau from 209 paper and pulp plants which gave their October employment at 60,082 decreasing in November to 59,562 a decrease of 0.9 per cent. The payrolls in these plants, too, decreased from $1,673,384 in October to $1,641,491 in November a decrease of 1.9 per cent.

The Bureau also received reports from 178 paper box factories which gave their October employment at 21,070 increasing in November to 21,178 an increase of 0.5 per cent. The payrolls in these factories, on the other hand, decreased from $496,384 in October to $490,447 in November a decrease of 1.2 per cent.

AVAILABILITY



Soda Ash
Caustic Soda
Liquid Chlorine
Bleaching Powder
Bicarbonate of Soda
Ammonia, Anhydrous & Aqua
HTH (Hypochlorite)
PURITE (Fused Soda Ash)
Sulphur Dichloride

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Section of the
Technical Association of the Pulp and Paper Industry
Edited by Ronald G. Macdonald, Secretary

Relative Economy of Pulverized Coal, Oil, and Gas as Boiler-Plant Fuels*

By Martin Frisch[1]

Where plants are so located that several fuels are available, the management must determine which fuel is most economical. An analysis of the cost of making steam with each of the available fuels is necessary. The various commonly used fuels are compared as to their relative economy. The influence of each fuel on overall plant performance and economy is considered. The paper sums up the relative plant efficiency and the relative plant economy to be expected of the various fuels.

Most steam plants are restricted in their choice of fuels by their location and by other considerations. But some plants are so located that several fuels of the same type or even of different types become interesting as fuel possibilities. The managers of such plants have to determine which of the available fuels will be most economical to use. The answer to this question is not necessarily the name of the fuel which may be delivered to the plant at the lowest cost per heat unit. This is a well-understood fact, and a careful and complete analysis of the final cost of making steam with each of the available fuels is necessary. But these analyses are too laborious to be made often. For that reason it is of interest to examine the various commonly used fuels and to compare their relative economy for steam making. The purpose of this paper is to present the results of such a comparison.

The ten fuels whose compositions and other properties are given in Table 1 are typical of fuels commonly employed for steam making, and they have been used as the basis of the comparison.

The fuel analysis is only a partial guide to the dollar value of a fuel, and a knowledge of physical characteristics determinable by laboratory tests only incompletely supplements the story told by the analysis. In order to evaluate the relative economy of various fuels it is necessary to consider the influence of each fuel on overall plant performance and economy, preferably on the basis of actual plant experience with each fuel. This necessarily also forces an investigation of the influence of each fuel on plant design and plant cost.

This paper will consider, first, the relative plant efficiency and, second, the relative plant economy to be expected with the various fuels.

It is a matter of common knowledge among power-plant engineers that a given boiler plant cannot burn with equal efficiency all

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* Presented at the Third National Fuels Meeting, Philadelphia, Pa., October 7 to 10, 1929, of The American Society of Mechanical Engineers, 29 West 39th street, New York, N. Y. All papers are subject to revision.

Note: Statements and opinions advanced in papers are to be understood as individual expressions of their authors, and not those of the Society.

[1] Engineer in Charge of Development, Combustion Engineering Corporation.

TABLE 1.—TYPICAL FUELS USED FOR STEAM MAKING

	Texas lignite	Illinois bituminous	Pittsburgh bituminous	Pocahontas coal	River anthracite	Oil		Blast-furnace gas	Natural gas No. 1	Natural gas No. 2	Coke-oven gas
Ultimate Analysis, Per Cent by Weight											
C	39.6	68.0	75.4	80.7	77.6	84.3	CO	27.6	25.6	...	15.2
H_2	3.0	4.3	4.8	4.7	2.3	12.7	H_2	0.2	7.0	...	9.7
O_2	10.0	8.3	6.1	4.5	3.6	1.0	CH_4	0.4	30.3	97.5	41.3
N_2	0.9	1.5	1.4	1.3	0.8	0.2	CO_2	12.1	16.0	...	3.0
S	0.5	1.4	1.4	1.2	0.7	0.8	O_2	0.1	0.8	...	...
Ash	10.0	10.0	8.5	5.0	14.0	...	N_2	59.6	7.3	2.5	30.8
Moisture	36.0	6.5	2.4	2.6	1.0	1.0	C_2H_4	...	5.6	...	..
							C_2H_6	...	7.4	...	..
Proximate Analysis, Per Cent by Weight											
Volatile	32.0	37.0	34.5	18.2	8.2						
Fixed carbon	22.0	46.5	54.6	74.2	76.8						
Ash	10.0	10.0	8.5	5.0	14.0						
Moisture	36.0	6.5	2.4	2.6	1.0						
Other Properties											
Heat value, B.t.u. per lb.	7000	11,700	13,400	14,500	12,450	18,600		1426	15,530	23,400	16,354
Fusing point of ash, deg. F.	2200	2000	2100	2500	2400						
Theoretical air required	2.21	9.04	10.14	10.77	9.63	14.12		0.82	10.3	16.8	10.86
Flue-Gas Analysis, Per Cent by Volume (For the plant comparison)											
CO_2	15.0	15.0	15.0	15.0	15.0	13.0		21.6	11.3	10.2	8.4
O_2	4.3	4.2	3.9	4.1	5.0	3.1		0.9	2.0	1.2	1.9
N_2	80.7	80.8	81.1	80.9	80.0	83.9		77.5	86.7	88.6	89.7

fuels to which the plant may be readily adaptable. The maximum efficiency attainable with any given fuel in a given plant depends on the character of the fuel. Not only the furnace efficiency, but also the boiler heat-absorbing capacity, the flue-gas temperature, and the draft loss depend on the character of the fuel. The boiler has an uncanny way of guessing changes in its furnace diet, as will be shown.

The influence of each of the ten fuels of Table 1 on the performance of a certain boiler was investigated, and the maximum efficiencies attainable with furnaces and firing equipment most suitable to develop the highest efficiency possible with each fuel were determined.

Since all of the fuels considered may be burned in suspension and some of them cannot be burned any other way, it will be understood readily that for the purpose of this investigation, embracing solid, liquid, and gaseous fuels, pulverized-fuel firing was considered only, in order to simplify the comparison. The conclusions of the investigation, which were checked against the results of comparable actual boiler tests, confirm the value of an index of boiler performance already suggested by others. This is the amount of sensible heat imparted to the products of combustion per pound passed through the boiler. The magnitude of this index depends on (1) the heat value of the fuel, (2) the weight of gas and vapor formed in the combustion of the fuel, and (3) amount of heat made unavailable by the incomplete combustion of the fuel and the evaporation of moisture and the formation of water vapor by the burning of hydrogen in the fuel.

The effect of incomplete combustion losses on the index is small because the reduction in available heat due to this cause is compensated for by the reduction in the total amount of gas formed per pound of fuel by a quantity proportional to the amount of unburned fuel.

The amount of excess air used influences the magnitude of the index by its effect on the total quantity of gas formed per available heat unit.

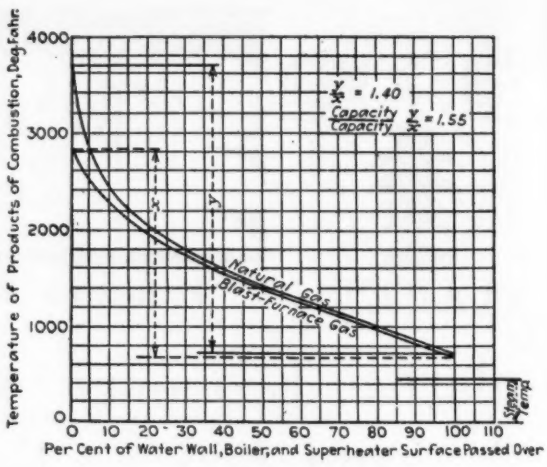


FIG. 2

Flame temperature has more effect on boiler capacity and the amount of heat absorbed than on exit temperatures.

The moisture in the fuel and the vapor formed by the burning of the hydrogen have the greatest effect on the magnitude of the index, because the effect is twofold. First, the total quantity of gas formed per available heat unit varies with the amount of vapor formed, and second, the latent heat absorbed in the formation of vapor reduces the amount of sensible heat available. The index evidently depends greatly on the fuel characteristics.

Fig. 1 summarizes the relationships existing between the index (the available sensible heat) and the three factors which measure boiler performance; namely, capacity, draft loss, and exit temperature. A typical sectional header and a typical bent-tube boiler are compared in Fig. 1.

The greater the available sensible heat per pound of gas passed through the boiler the greater the capacity developed with a given draft loss. This can be pictured another way, as in Fig. 2, where the decrease in the temperature of identical weights of the products of combustion of natural gas and blast-furnace gas as more and more heating surface is passed over is shown. Each fuel was burned with 10 per cent excess air. Although the combustion temperature of the natural gas was almost 100 deg. fahr. higher than that of the blast-furnace gas, the boiler-exist temperatures were within 35 deg. of each other. The heat given up to the boiler by the products of the natural gas and the capacity de-

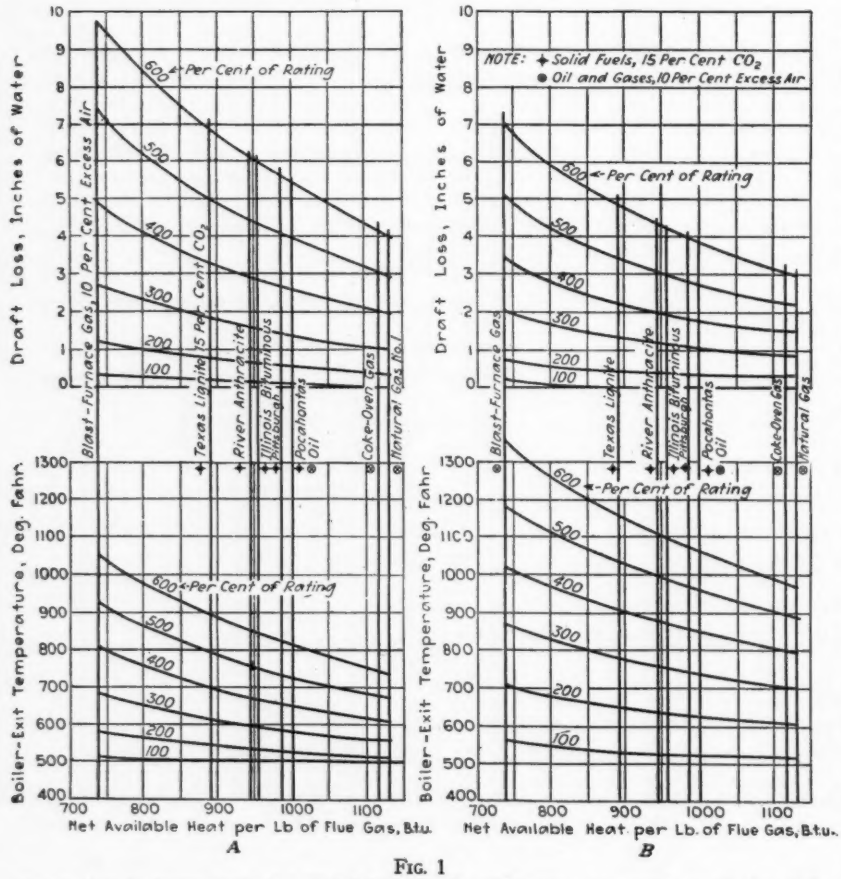


FIG. 1

Sensible heat in furnace gases is a good index of boiler performance. (A, typical straight-tube boiler; B, typical bent-tube boiler).

veloped were 55 per cent greater, but the draft loss was very nearly the same in the two cases. An extension of such comparisons to the other fuels of Table 1 makes it possible, as shown by Fig. 1, to determine the boiler performance to be expected with each fuel, in accordance with the amount of excess air used in its combustion, and to determine the exit temperatures to be expected at any rating with the several fuels, as in Fig. 3, and the efficiencies, as in Fig. 4. It is necessary, when deriving the efficiencies peculiar to each fuel, to take into account the fact that at any rating and excess air the exit temperatures will vary with the fuel as in Fig. 3, which is based on 15 per cent CO_2 (approximately 20 per cent excess air) in the products of the solid fuels, 13 per cent CO_2 (15 per cent excess air) in the products of oil, and 10 per cent excess air in the combustion of gaseous fuels.

If the air used for combustion is preheated, the sensible heat available per pound of flue gas increases, because the heat available per pound of fuel is increased without a corresponding increase in the weight of the products of combustion. The effect of this is to increase the capacity attainable with a given weight of gas and with a given exit temperature so that at any given capacity the boiler efficiency will actually be higher than it would be with cold air and the draft loss lower. This gain, which increases with the boiler capacity, is additional to the gain which results from the actual recovery of heat in the air preheated The effect of the use of preheated air on the boiler-exit temperature and on the efficiency is shown in Fig. 5. At 500 per cent of rating the increase in efficiency is 1 per cent and the decrease in draft loss over ¼ inch.

The differences in boiler-exit temperatures at any given rating only partly account for the differences in efficiency attainable with the various fuels. There are also considerable differences in the completeness with which the various solid fuels may be burned and in the latent heat losses (which particularly affect the oil and gaseous fuels adversely) inevitable with the various fuels. The gaseous fuels and oil may be burned with negligible incomplete combustion losses. However, this is not true of solid fuels, whether burned in suspension or on grates. Experience indicates that if the solid fuels are burned in suspension after being pulverized to the fineness customary for each fuel the losses due to incomplete combustion will be about as shown in Fig. 6. The high fixed-carbon coals are most difficult to burn completely in suspension and will suffer the greatest wastage due to incomplete combustion.

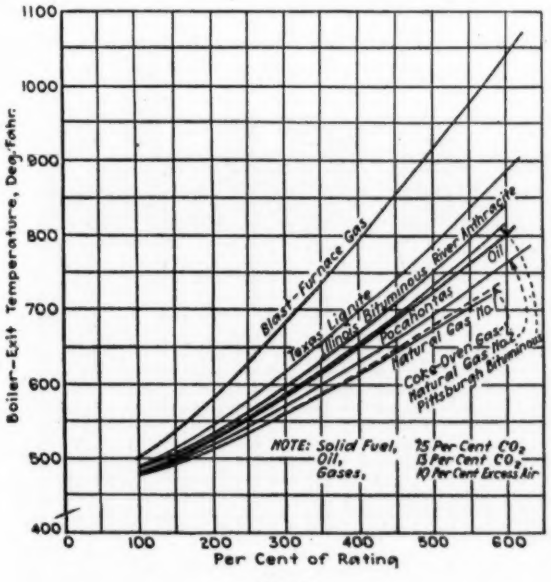


FIG. 3

At any rating the exit temperature depends on the fuel.

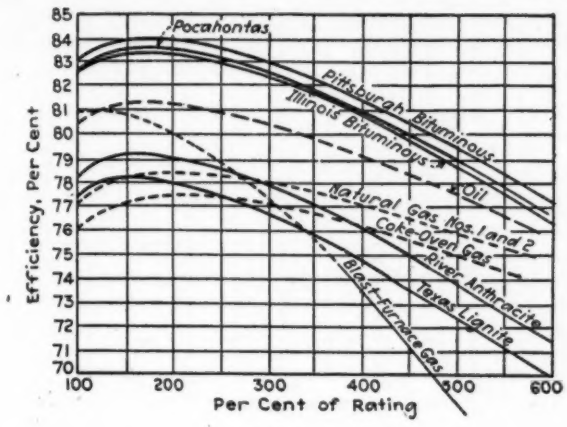


FIG. 4

The best efficiencies attainable with different fuels vary widely. (Based on Figs. 1, 3, 6 and 7.)

As the fixed carbon decreases, the carbon loss to be expected, all other things remaining equal, also decreases.

This can be substantiated by a study of a large number of tests on pulverized-lignite fuels, Western sub-bituminous coals, Midwestern bituminous, and Eastern coals, including river anthracite. Fig. 6 is based on the conclusions of such a study.

The amount of heat lost by radiation at any capacity will be very nearly the same for all of the fuels, and no great error in the conclusions of this paper will result from assuming the radiation losses to be as shown in Fig. 7.

If the heat balances of all the fuels be compared, as in Fig. 8, the incomplete combustion will be found to increase in this order: (1) Lignite, (2) Illinois bituminous, (3) Pittsburgh bituminous,

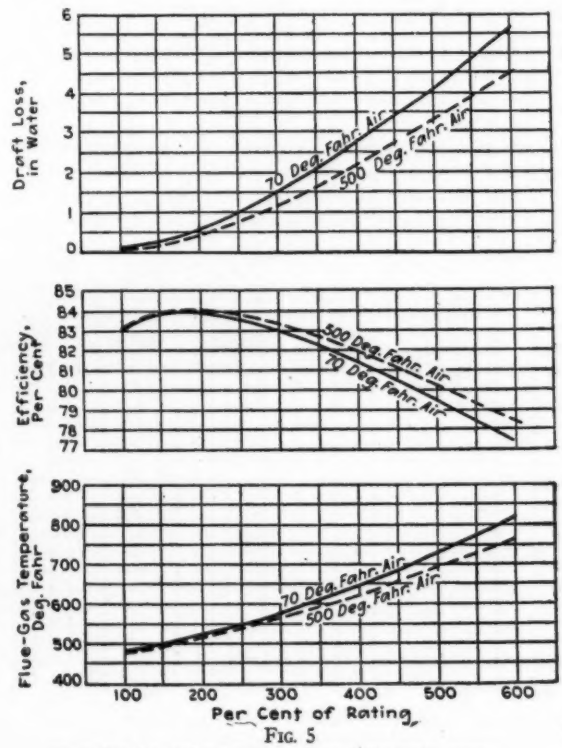


FIG. 5

Preheating the combustion air improves boiler performance.

(4) Pocahontas semi-bituminous, and (5) river anthracite. The latent heat losses due to the burning of hydrogen and the evaporation of moisture increase in the inverse order. No incomplete-combustion losses are expected when burning oil and the gaseous fuels, but the latent heat losses are very high for these fuels and may exceed 10 per cent for natural and coke-oven gas. The attainable efficiencies are very nearly the same for Pittsburgh, Illinois, and Pocahontas coals. Of the particular coals of Table 1, Pittsburgh coal can be burned with about ½ per cent greater

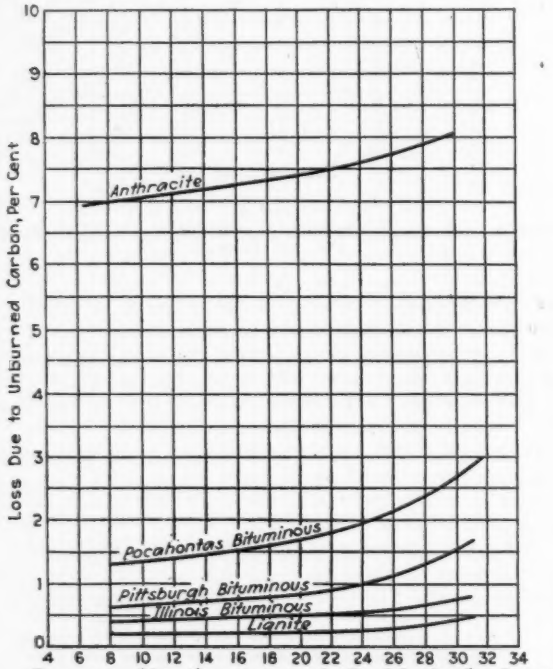


FIG. 6

Incomplete combustion losses when burning pulverized fuels depend on the history of the fuel.

efficiency than Pocahontas coal under the assumed conditions, chiefly because of the lower carbon losses to be expected with Pittsburgh coal, and with about ¼ per cent greater efficiency than Illinois coal, because of the somewhat higher exit temperature to be expected with Illinois coal at a given capacity and excess air. Maximum efficiencies attainable with river anthracite and Texas lignite are 5 to 6 per cent lower than with Pittsburgh coal on account of higher exit temperatures and carbon losses with river anthracite and on account of higher exit temperatures and latent

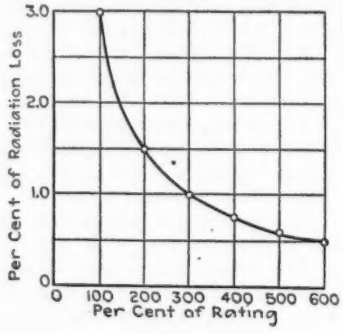


FIG. 7

Radiation loss.

heat losses with lignite at identical capacities and excess air ratios. The fact that oil and gaseous fuels can be burned with lower excess air than is the case with the solid fuels was taken into account in comparing the best efficiencies peculiar to these fuels. On this basis mechanically atomized oil can be burned with efficiencies 2 to 2¾ per cent under those to be expected with Pittsburgh coal because of the larger latent heat loss. Steam atomization will have the effect of lowering the boiler-performance index of the oil and will cause higher exit temperature and draft losses at any given capacity. Blast-furnace gas has a very steep efficiency curve on account of large sensible heat losses due to the large amount of flue gas into which the available heat must spread. Efficiencies attainable with blast-furnace gas will be 2 to 20 per cent lower than with Pittsburgh coal. Coke-oven and natural gas can be burned efficiently, but on account of latent heat losses of over 10 per cent or more, the overall efficiencies to be expected with these fuels will run 3 to 5 per cent lower than with Pittsburgh coal.

The significance of these efficiency differences is to be found in Fig. 9, which shows the number of heat units which must be purchased in different fuels and supplied to the furnace per million B.t.u. of heat absorbed by the boiler.

Comporative Boiler-Plant Economy With Various Fuels

The character of the fuel affects not only the number of fuel

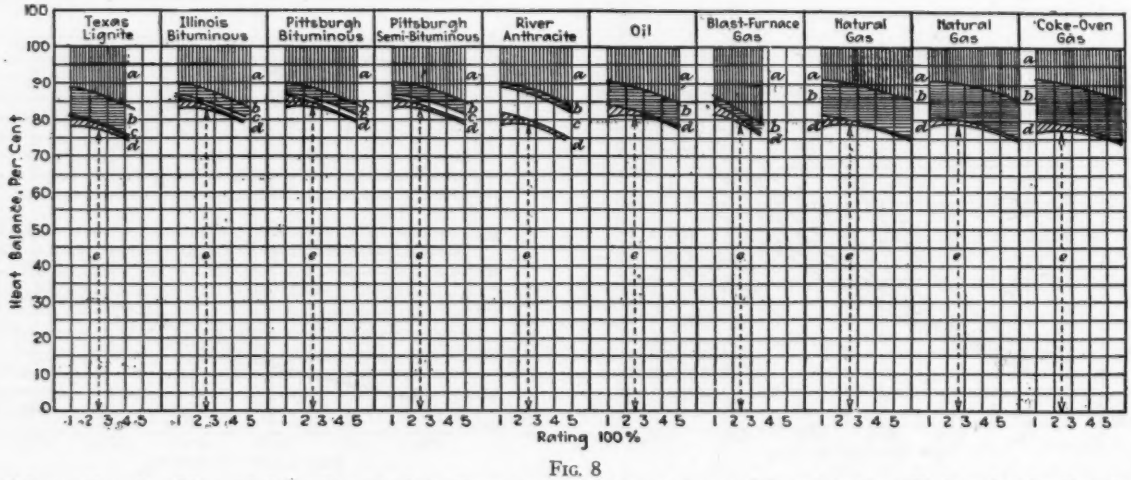


FIG. 8

Heat balance with a given firing method depends on the fuel. The carbon loss increases as the age of the coal increase. The latent-heat loss depends on the water and hydrogen in the fuel. (a, loss due to sensible heat of products of combustion (above 70 deg. Fahr.); b, loss in latent heat of water vapor in products of combustion; c, loss due to incomplete combustion of carbon; d, radiation loss; e, heat absorbed, efficiency).

heat units required per steam heat unit but also the amount of money that must be expended in order to properly burn each fuel. The final cost of steam will depend on the following factors, some common to all fuels and others peculiar to each fuel as shown:

Common to All Fuels.

(*a*) Fixed operating and maintenance costs on boiler plant exclusive of fuel and fan equipment.

Peculiar to Each Fuel.

(*a*) Cost of fuel.

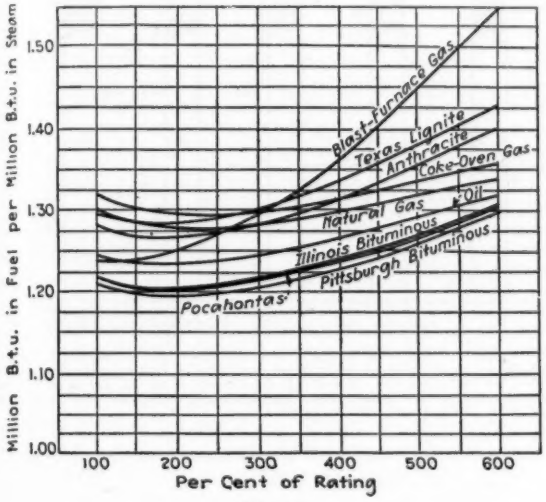


FIG. 9

Heat units required by furnace per heat unit in steam.

(*b*) Fixed operating and maintenance charges on fuel storage, handling, preparation, and burning equipment.

(*c*) Fixed charges and operating charges on fans and draft equipment.

(*d*) Fixed charges on plant capacities reserved to provide peak requirements of the fuel and fan equipment.

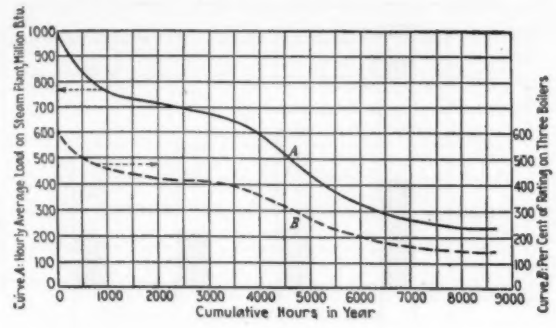


FIG. 10

Boiler plant load duration diagram for comparing fuels under the same load conditions.

Although a steam plant of a given capacity designed to burn some particular fuel or fuels might cost almost anything, depending on the design and on the labor and economic conditions at the time of construction, it will nevertheless be instructive to determine as accurately as possible to what extent the cost of the boiler plant and the fixed and operating and maintenance costs will depend on the fuel which the plant is intended to utilize. Data on the complete cost of building and operating steam plants were studied, and on the basis of this study the probable fixed, operating, and maintenance costs of steam plants most suitable to any one or more of the fuels of Table 1 were determined. Also, the fuels which will produce steam at the lowest price and the relative economy of all the fuels were ascertained.

The cost of building and operating steam plants best suited to meet the same annual steam-demand curve, say as of Fig. 10, and best suited to each of the ten fuels of Table 1 has been calculated in order to make a concrete comparison of the cost of steam with the various fuels. It is assumed that 1,000,000 lb. of steam per hour is the peak capacity of each plant, and for this purpose four boilers, each capable of evaporating 350,000 lb. of steam per hour at peak load, are assumed, three boilers to carry the load and the fourth to be the spare. Air heaters and economizers are not considered, in order to keep the comparison as simple as possible.

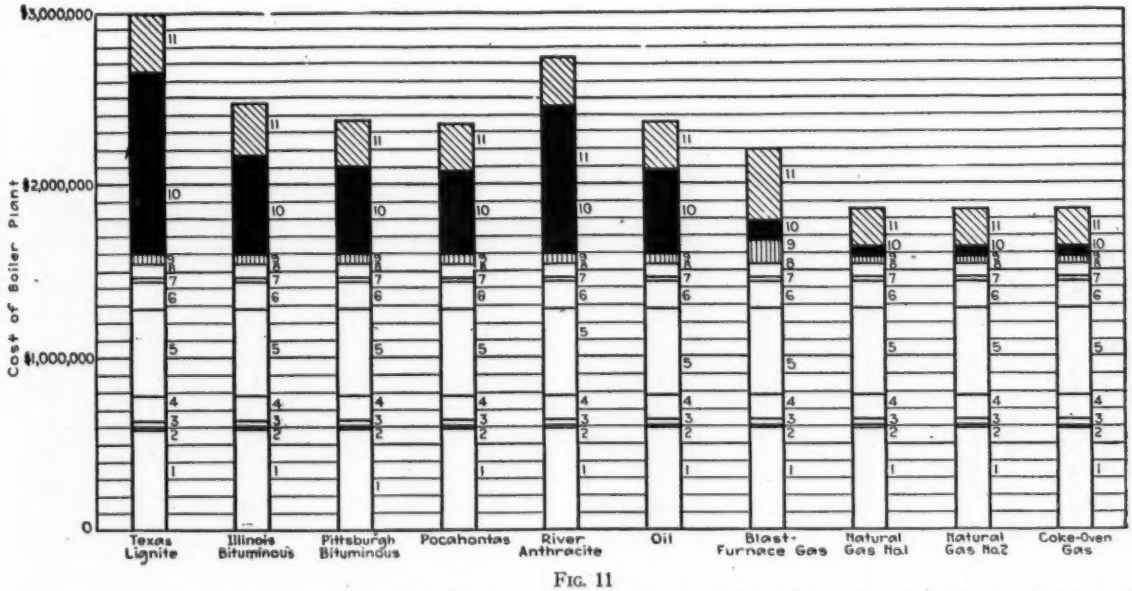


FIG. 11

Comparative cost of boiler plants utilizing various fuels. (The figures indicate the total cost, installed, as follows: 1, boilers, superheaters, water walls, settings; 2, meters, instruments; 3, boilerfeed pumps; 4, stacks, breechings, insulation; 5, foundations, structure; 6, wiring; 7, site development; 8, engineering; 9, draft equipment, fans; 10, fuel receiving, storage, handling, preparation, firing equipment; 11, reserve-plant cost for peak-load auxiliary-power requirements of boiler plant).

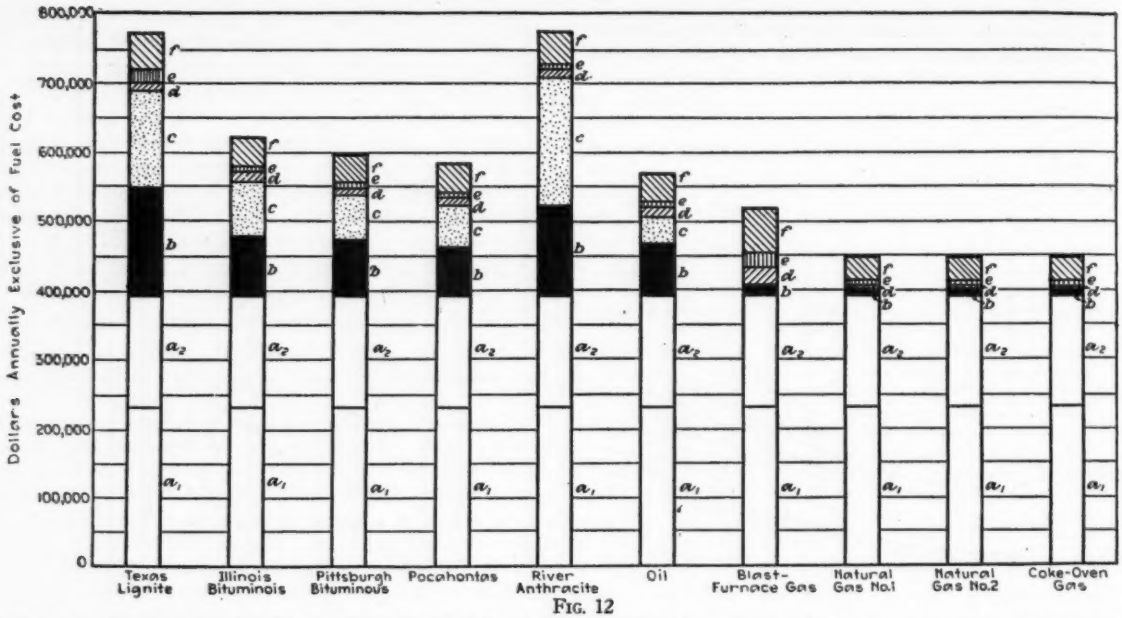


FIG. 12

Yearly cost of making steam exclusive of fuel cost with various fuels. (a, fixed charges at 15 per cent on boiler plant exclusive of fuel equipment $(1+2+3+4+5+6+7+8)\times 0.15$; b, fixed charges at 15 per cent on fuel equipment and fans $(9+10)\times 0.15$; f, fixed charges at 15 per cent on plant capacity reserved for boiler-plant peak; e, fixed charges on draft equipment; a, operating charges on boiler plant, not including draft and fuel equipment; c, operating charges on fuel equipment; d, operating charges on draft equipment).

The probable cost of such steam plants suitable to each of the ten fuels of Table 1 will be as shown by Fig. 11. The cost of each plant, exclusive of those costs affected by the fuel, is the same. Those costs which depend on the fuel have been carefully ascertained for the development of Fig. 11, in order to arrive at the total cost of the plant most suitable to each fuel.

The cost of equipment required for the receiving, handling, and treating of fuel from the time of its arrival at the plant until its delivery to the furnace ready to burn will vary widely for the several fuels, because of the wide differences in the character and in the quantities of the different fuels to be handled annually, in order to satisfy the load requirements of Fig. 10. Thus the quantities of the several fuels required yearly will be as follows:

Fuel	Tons
Texas lignite	440,000
Illinois bituminous	245,000
Pittsburgh bituminous	212,000
Pocahontas bituminous	196,000
River anthracite	244,000
Oil	157,500
Blast-furnace gas	2,160,000
Natural gas No. 1	195,000
Natural gas No. 2	129,000
Coke-oven gas	185,500

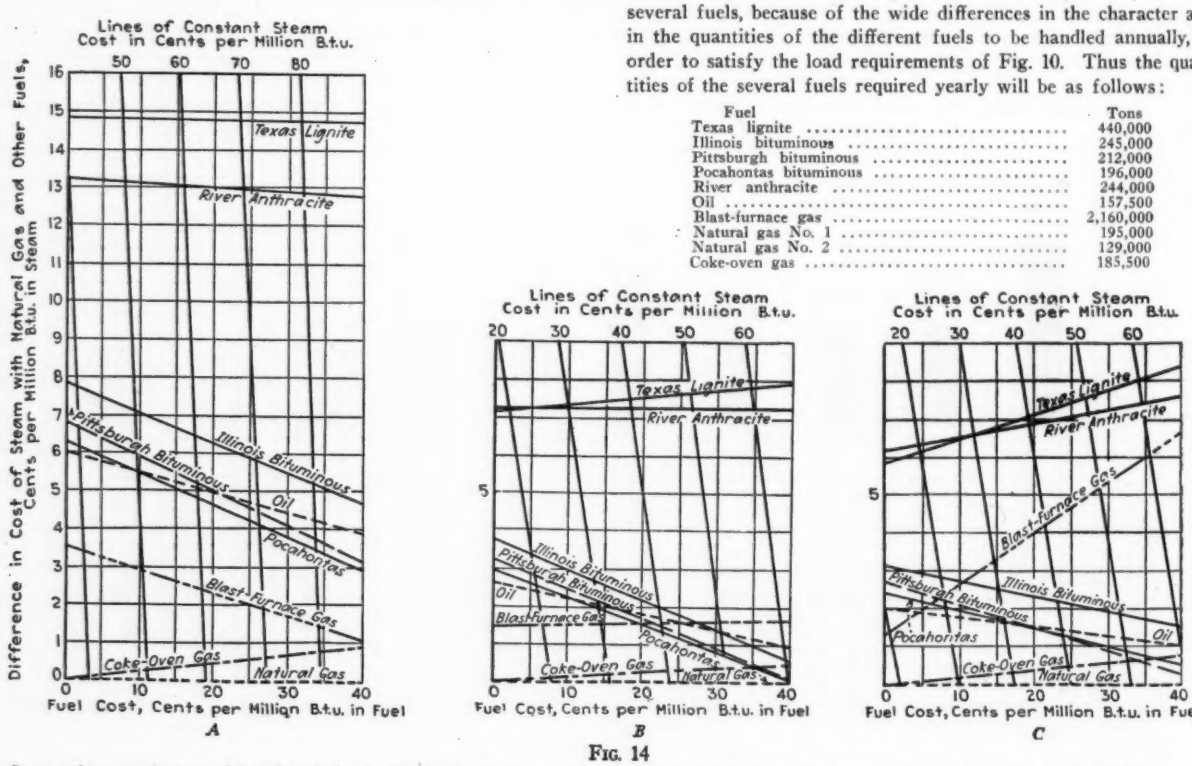


FIG. 14

Comparative cost of steam with various fuel. A, 170,000 lb. steam per hour plant load, aproximately 100 per cent rating on three boilers; B, 500,000 lb. steam per hour plant load, approximately 300 per cent rating on three boilers; C, 830,000 lb. steam per hour plant load, approximately 500 per cent rating on three boilers.

These weights take into account the weighted average operating efficiency over the year, which is 2 per cent lower than the weighted average of the best efficiencies attainable at each load.

The weight of lignite required is more than twice the weight of the other solid fuels. Lignite may arrive at the plant with a moisture content of 30 to 35 per cent, and this has to be reduced to about 27 or 28 per cent in order to make the lignite dry enough to pulverize and burn properly. Drying equipment to accomplish this is required. The cost of the fuel, unloading, storage, handling, preparation, and burning equipment will be about twice as great as for Pittsburgh coal, and the cost of operating this equipment will also be considerably more than for the other solid fuels except river anthracite.

Although the storage, handling, and firing equipment for anthracite will cost but little more than that required for Pittsburgh coal, the capacity of the pulverizing plant for river anthracite coal will be at least twice as great because of its greater hardness and also because it must be pulverized finer than Pittsburgh coal. The pulverizing-plant operating and maintenance costs also will exceed those to be expected with bituminous coals, and may easily with certain types of equipment be three times as high. Pocahontas coal, on the other hand, is very easy to pulverize, and the capacity of a given grinding plant may be 30 to 50 per cent greater when handling this fuel than with Pittsburgh coal.

Oil requires heavy outlays for storage facilities, while the gaseous fuels will call for but very modest outlays for fuel handling.

All equipment and plant provisions peculiar to each fuel to be handled have been considered in computing the cost of each steam plant (as finally shown in Fig. 11) for the utilization of each fuel in accordance with the postulated load requirements. The fixed, operating, and maintenance costs peculiar to each fuel were also computed, as shown in Fig. 12.

Differences in the fixed, operating, and maintenance costs peculiar to the several fuels are not entirely accounted for by differences in the fuel equipment, but also by differences in fixed and operating costs, due to differences in the draft equipment required by the several fuels and by differences in the supplementary plant capacity that must be reserved to accommodate the peak-power requirements of the steam plant. The induced-draft fan requirements will be quite different for each fuel, as shown by Fig. 13. Furthermore, the peak-power requirements will be different for the various fuels, and reserve or supplementary plant capacity must be provided in different amounts to satisfy the peak requirements.

Fig. 12 shows the magnitude of the various items entering into the yearly cost of making steam, exclusive of the cost of fuel. The differences in the carrying and other charges which depend on the fuel are striking.

The relative economy of the several fuels on a basis which is fair to each fuel can be determined by establishing the maximum price which each of the ten plants especially designed to develop the best economy with each fuel can afford to pay for fuel in order to produce steam at the same cost. This puts the fuels on a bona fide competitive basis. Or, the cost of making steam with the several fuels at a constant cost per fuel heat unit might be compared. Fig. 14 makes it possible to compare the relative economy of the ten fuels of Table 1 on either basis, at several load factors.

At a given cost per fuel heat unit, natural gas is the most economical fuel, and was therefore used as the standard for comparison. The relative economy of the several fuels is shown by the difference between the cost of making steam with natural gas and other fuels at a given fuel cost. Or, the price to be paid per fuel heat unit in order to produce steam at the same price may be determined by noting the intersections of the lines of constant steam cost with the vertical lines of constant fuel cost.

Of course, the absolute costs as established by Fig. 14 are not promiscuously applicable to any and all plants. But their relative magnitude can serve as an index of the comparative economy of certain fuel types under conditions most favorable to each.

But suppose the various plants should be confronted by the necessity of making a choice between their customary fuel and some other offerings. Some of the offerings could probably be handled without any changes in the plant. Some may require additional capital expenditures. For example, a plant designed for pulverized lignite could conveniently handle any of the other solid fuels, and by the installation of additional equipment it could also use natural gas or oil. Such a plant in Texas would probably only have the choice of lignite, natural gas, or oil.

But a lignite plant in St. Paul or Minneapolis or Duluth although primarily designed for using North Dakota lignite also might have to consider Eastern coals shipped by way of the Great Lakes, or even Midwestern coal. Fig. 15 shows the relative magnitudes of the various items entering into the cost of making steam with various fuels in plants designed primarily to handle lignite and which may or may not also have the necessary equipment to handle either natural gas or oil, or both. On the basis of an

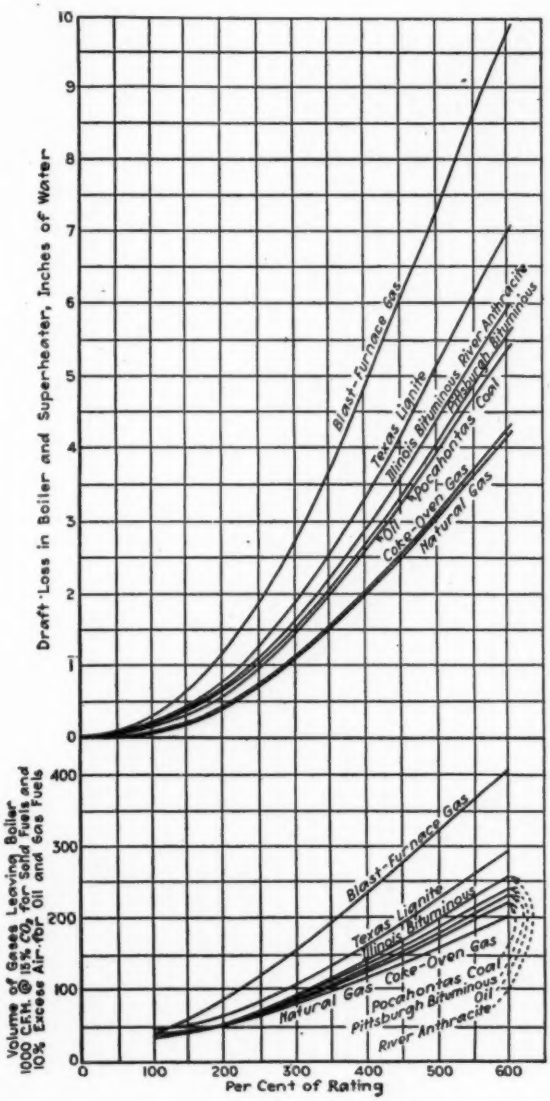

Draft Loss in Boiler and Superheater, Inches of Water
Blast-Furnace Gas
Texas Lignite
Illinois Bituminous
River Anthracite
Pittsburgh Bituminous Coal
Pocahontas Coal
Oil
Coke-Oven Gas
Natural Gas
Volume of Gases Leaving Boiler 1000 C.F.M. @ 15% CO2 for Solid Fuels and 10% Excess Air for Oil and Gas Fuels
Per Cent of Rating

FIG. 13

Induced-draft fan requirements also depend on the fuel.

analysis of the other plants, the maximum price of each fuel which will result in the same steam cost was determined and summarized in Table 2.

Table 2 makes it clear that a lignite plant in Texas cannot afford to burn oil. And as long as lignite may be purchased at $1.50 per ton, as is the case with several operating plants, even natural gas becomes attractive only at dump rates. A lignite plant in St. Paul, however, may not find its choice so easy with the cost of lignite from North Dakota $4 or more, laid down at the plant. Eastern coal becomes competitive under these conditions.

At present prices river anthracite would seem to merit consideration in competition with the best coals if a steady supply can be assured to the plant. Anthracite culm at prices comparable to those being obtained for river anthracite would make culm even

TABLE 2.—MAXIMUM PRICE TO BE PAID FOR VARIOUS FUELS TO PRODUCE STEAM AT THE SAME COST
(In dollars per ton of solid fuels; in dollars per barrel of oil; in cents per 1,000 cu. ft. of gas.)

		Total steam cost per 1,000,000 B.t.u. — 30 cents							40 cents							50 cents						
Fuels designed for	Fuel actually used	River anthracite	Lignite	Illinois	Pittsburgh	Pocahontas coal	Oil	Natural gas	River anthracite	Lignite	Illinois	Pittsburgh	Pocahontas coal	Oil	Natural gas	River anthracite	Lignite	Illinois	Pittsburgh	Pocahontas coal	Oil	Natural gas
Lignite only	Lignite	...	1.34	...	...	...	...	...	...	2.38	...	...	...	...	...	...	3.41	...	...	...	...	...
	Illinois	...	...	2.66	...	...	...	...	...	...	4.52	...	...	...	...	...	...	6.38	...	...	...	...
	Pittsburgh	...	...	...	3.15	...	...	...	...	...	...	5.30	...	...	...	...	...	...	7.45	...	...	...
	Pocahontas	...	...	...	...	3.42	...	...	...	...	...	...	5.74	...	...	...	...	...	...	8.06	...	...
Lignite and natural gas	Lignite	...	1.31	...	...	...	...	...	...	2.35	...	...	...	...	...	...	3.38	...	...	...	...	...
	Illinois	...	...	2.59	...	...	...	...	...	...	4.45	...	...	...	...	...	...	6.31	...	...	...	...
	Pittsburgh	...	...	...	3.07	...	...	...	...	...	...	5.22	...	...	...	...	...	...	7.37	...	...	...
	Pocahontas	...	...	...	...	3.33	...	...	...	...	...	...	5.64	...	...	...	...	...	...	7.96	...	...
	Nat. gas	...	...	...	...	...	...	12.1	...	...	...	...	...	...	19.8	...	...	...	...	...	...	27.2
Lignite and oil	Lignite	...	1.18	...	...	...	...	...	...	2.22	...	...	...	...	...	...	3.25	...	...	...	...	...
	Illinois	...	...	2.35	...	...	...	...	...	...	4.21	...	...	...	...	...	...	6.07	...	...	...	...
	Pittsburgh	...	...	...	2.79	...	...	...	...	...	...	4.94	...	...	...	...	...	...	7.09	...	...	...
	Pocahontas	...	...	...	...	3.04	...	...	...	...	...	...	5.36	...	...	...	...	...	...	7.68	...	...
	Oil	...	...	...	...	...	0.62	...	...	...	...	...	...	1.07	...	...	...	...	...	...	1.53	...
Lignite and natural gas and oil	Lignite	...	1.15	...	...	...	...	...	...	2.19	...	...	...	...	...	...	3.22	...	...	...	...	...
	Illinois	...	...	2.30	...	...	...	...	...	...	4.16	...	...	...	...	...	...	6.02	...	...	...	...
	Pittsburgh	...	...	...	2.72	...	...	...	...	...	...	4.87	...	...	...	...	...	...	7.02	...	...	...
	Pocahontas	...	...	...	...	2.97	...	...	...	...	...	...	5.29	...	...	...	...	...	...	7.61	...	...
	Oil	...	...	...	...	...	0.61	...	...	...	...	...	...	1.06	...	...	...	...	...	...	1.52	...
	Nat. gas	...	...	...	...	...	...	10.7	...	...	...	...	...	...	18.3	...	...	...	...	...	...	25.8
Illinois coal only	Illinois	...	...	3.02	...	...	...	...	...	...	4.88	...	...	...	...	...	...	6.74	...	...	...	...
	Pittsburgh	...	...	...	3.55	...	...	...	...	...	...	5.70	...	...	...	...	...	...	7.85	...	...	...
	Pocahontas	...	...	...	...	3.90	...	...	...	...	...	...	6.22	...	...	...	...	...	...	8.54	...	...
Illinois coal and natural gas	Illinois	...	...	3.00	...	...	...	...	...	...	4.86	...	...	...	...	...	...	6.72	...	...	...	...
	Pittsburgh	...	...	...	3.51	...	...	...	...	...	...	5.66	...	...	...	...	...	...	7.81	...	...	...
	Pocahontas	...	...	...	...	3.85	...	...	...	...	...	...	6.17	...	...	...	...	...	...	8.49	...	...
	Nat. gas	...	...	...	...	...	...	13.5	...	...	...	...	...	...	21.0	...	...	...	...	...	...	28.5
Illinois coal and oil	Illinois	...	...	2.72	...	...	...	...	...	...	4.58	...	...	...	...	...	...	6.44	...	...	...	...
	Pittsburgh	...	...	...	3.20	...	...	...	...	...	...	5.35	...	...	...	...	...	...	7.50	...	...	...
	Pocahontas	...	...	...	...	3.51	...	...	...	...	...	...	5.83	...	...	...	...	...	...	8.15	...	...
	Oil	...	...	...	...	...	0.70	...	...	...	...	...	...	1.16	...	...	...	...	...	...	1.62	...
Illinois coal and natural gas and oil	Illinois	...	...	2.64	...	...	...	...	...	...	4.50	...	...	...	...	...	...	6.36	...	...	...	...
	Pittsburgh	...	...	...	3.16	...	...	...	...	...	...	5.31	...	...	...	...	...	...	7.46	...	...	...
	Pocahontas	...	...	...	...	3.47	...	...	...	...	...	...	5.79	...	...	...	...	...	...	8.11	...	...
	Oil	...	...	...	...	...	0.69	...	...	...	...	...	...	1.15	...	...	...	...	...	...	1.61	...
	Nat. gas	...	...	...	...	...	...	12.3	...	...	...	...	...	...	19.8	...	...	...	...	...	...	27.3
Pittsburgh coal only	Pittsburgh	...	...	...	3.61	...	...	...	...	...	...	5.76	...	...	...	...	...	...	7.91	...	...	...
	Pocahontas	...	...	...	...	3.96	...	...	...	...	...	...	6.28	...	...	...	...	...	...	8.60	...	...
Pittsburgh coal and natural gas	Pittsburgh	...	...	...	3.57	...	...	...	...	...	...	5.72	...	...	...	...	...	...	5.87	...	...	...
	Pocahontas	...	...	...	...	3.92	...	...	...	...	...	...	6.24	...	...	...	...	...	...	8.56	...	...
	Nat. gas	...	...	...	...	...	...	13.7	...	...	...	...	...	...	21.2	...	...	...	...	...	...	28.7
Pittsburgh coal and oil	Pittsburgh	...	...	...	3.26	...	...	...	...	...	...	5.41	...	...	...	...	...	...	7.56	...	...	...
	Pocahontas	...	...	...	...	3.58	...	...	...	...	...	...	5.90	...	...	...	...	...	...	8.22	...	...
	Oil	...	...	...	...	...	0.72	...	...	...	...	...	...	1.17	...	...	...	...	...	...	1.63	...
Pittsburgh coal and natural gas and oil	Pittsburgh	...	...	...	3.22	...	...	...	...	...	...	5.37	...	...	...	...	...	...	7.52	...	...	...
	Pocahontas	...	...	...	...	3.54	...	...	...	...	...	...	5.86	...	...	...	...	...	...	8.18	...	...
	Oil	...	...	...	...	...	0.71	...	...	...	...	...	...	1.16	...	...	...	...	...	...	1.62	...
	Nat. gas	...	...	...	...	...	...	12.5	...	...	...	...	...	...	20.0	...	...	...	...	...	...	27.5
Pocahontas coal only	Pocahontas	...	...	...	...	3.99	...	...	...	...	...	...	6.31	...	...	...	...	...	...	8.63	...	...
Pocahontas coal and natural gas	Pocahontas	...	...	...	...	3.94	...	...	...	...	...	...	6.26	...	...	...	...	...	...	8.58	...	...
	Nat. gas	...	...	...	...	...	...	13.8	...	...	...	...	...	...	21.3	...	...	...	...	...	...	28.9
Pocahontas coal and oil	Pocahontas	...	...	...	...	3.60	...	...	...	...	...	...	5.92	...	...	...	...	...	...	8.24	...	...
	Oil	...	...	...	...	...	0.72	...	...	...	...	...	...	1.18	...	...	...	...	...	...	1.63	...
Pocahontas coal and natural gas and oil	Pocahontas	...	...	...	...	3.56	...	...	...	...	...	...	5.88	...	...	...	...	...	...	8.20	...	...
	Oil	...	...	...	...	...	0.71	...	...	...	...	...	...	1.17	...	...	...	...	...	...	1.62	...
	Nat. gas	...	...	...	...	...	...	12.6	...	...	...	...	...	...	20.1	...	...	...	...	...	...	27.6
River anthracite coal only	River anthracite	2.40	...	...	...	...	...	...	4.27	...	...	...	...	...	...	6.14	...	...	...	...	...	...
	Pittsburgh	...	...	...	3.34	...	...	...	...	...	...	5.49	...	...	...	...	...	...	7.64	...	...	...
	Pocahontas	...	...	...	...	3.69	...	...	...	...	...	...	6.01	...	...	...	...	...	...	8.33	...	...
River anthracite coal and natural gas	River anthracite	2.38	...	...	...	...	...	...	4.25	...	...	...	...	...	...	6.12	...	...	...	...	...	...
	Pittsburgh	...	...	...	3.31	...	...	...	...	...	...	5.46	...	...	...	...	...	...	7.61	...	...	...
	Pocahontas	...	...	...	...	3.66	...	...	...	...	...	...	5.98	...	...	...	...	...	...	8.30	...	...
	Nat. gas	...	...	...	...	...	...	12.7	...	...	...	...	...	...	20.3	...	...	...	...	...	...	27.8
River anthracite coal and oil	River anthracite	2.10	...	...	...	...	...	...	3.97	...	...	...	...	...	...	5.84	...	...	...	...	...	...
	Pittsburgh	...	...	...	2.99	...	...	...	...	...	...	5.14	...	...	...	...	...	...	7.29	...	...	...
	Pocahontas	...	...	...	...	3.31	...	...	...	...	...	...	5.63	...	...	...	...	...	...	7.95	...	...
	Oil	...	...	...	...	...	0.72	...	...	...	...	...	...	1.18	...	...	...	...	...	...	1.63	...
River anthracite coal and natural gas and oil	River anthracite	2.07	...	...	...	...	...	...	3.94	...	...	...	...	...	...	5.81	...	...	...	...	...	...
	Pittsburgh	...	...	...	2.96	...	...	...	...	...	...	5.11	...	...	...	...	...	...	7.26	...	...	...
	Pocahontas	...	...	...	...	3.27	...	...	...	...	...	...	5.59	...	...	...	...	...	...	7.91	...	...
	Oil	...	...	...	...	...	0.71	...	...	...	...	...	...	1.17	...	...	...	...	...	...	1.62	...
	Nat. gas	...	...	...	...	...	...	11.5	...	...	...	...	...	...	19.1	...	...	...	...	...	...	26.6
Natural gas	Nat. gas	...	...	...	...	...	...	15.2	...	...	...	...	...	...	22.7	...	...	...	...	...	...	30.2
Oil	Oil	...	...	...	...	...	0.79	...	...	...	...	...	...	1.25	...	...	...	...	...	...	1.72	...
Oil and natural gas	Oil	...	...	...	...	...	0.79	...	...	...	...	...	...	1.24	...	...	...	...	...	...	1.70	...
	Nat. gas	...	...	...	...	...	...	13.7	...	...	...	...	...	...	21.2	...	...	...	...	...	...	28.8

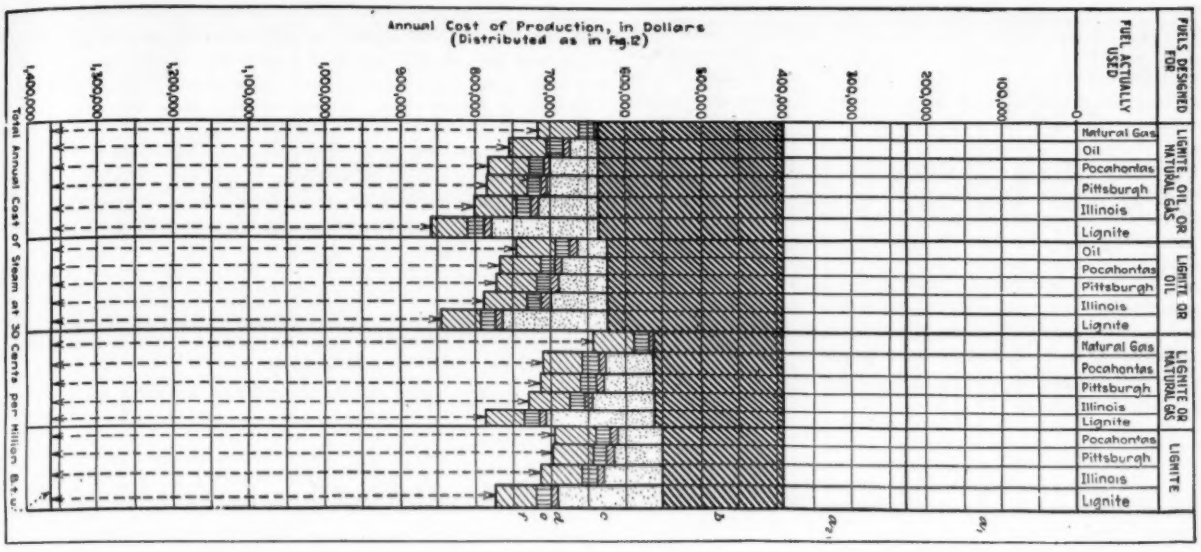


FIG. 15.

Effect of fuel changes on permissible fuel cost in order to product steam at same cost. (a, fixed charges at 15 per cent on boiler plant exclusive of fuel equipment $(1 + 2 + 3 + 4 + 5 + 6 + 7 + 8) \times 0.15$; b, fixed charges at 15 per cent on fuel equipment and fans $(9 + 10) \times 0.15$; f, fixed charges at 15 per cent on plant capacity reserved for boiler-plant peak; e, fixed charges on draft equipment; a_2, operating charges on boiler plant, not including draft and fuel equipment; c, operating charges on fuel equipment; d, operating charges on draft equipment).

more attractive than river anthracite. A plant suitable for culm which could be laid down at the plant at $2.50 or less for a considerable length of time could produce steam more cheaply than most plants in the East now do.

In general, it is quite safe to say that the installation of supplementary oil-burning equipment is seldom justified unless under most unusual market conditions. Even at present fuel oil prices it is difficult to do so.

In view of the many projects now under way for the more general distribution of natural gas, as for example the plans now maturing for making such gas available in the Middle West, especially in the St. Louis industrial area, it is of interest to consider the possibility of using natural gas in each of the plants considered in this paper. This is especially true because the additional capital expenditure required to adapt a pulverized coal or oil plant to the use of this fuel is small. At 20 cents per 1000 cu. ft., 1000 B.t.u. gas could compete with the usual $4.50 (delivered) Illinois coal or with $5.50 Pittsburgh coal.

Summary

The best economy attainable with various fuels at a given cost per fuel heat unit depends more on the fixed and operating costs peculiar to each fuel than on the efficiency of the plant with each fuel. In general, the greater the net available heat value of the products of combustion of the fuel as formed, the greater the economy, as shown by Fig. 14.

A plant designed for any solid fuel will generally be most economical when handling that fuel or any higher-grade fuel obtainable at the same price per heat unit which may be used without additional capital expenditures. Thus a lignite plant or a river anthracite plant can utilize any of the other solid fuels more economically than the fuels for which it was designed, if the others may be obtained at the same price per heat unit. In fact, some of them may be more economical at a higher price per heat unit. But as a rule the low-grade fuel is of local interest, and the absence of freight handicaps make it possible for it to compete with the higher-grade fuels. A plant designed for a high-grade solid fuel will generally not be able to develop its full capacity with a very much lower grade of fuel, and therefore cannot take advantage of favorable low-grade fuel prices. Thus a plant designed for Pittsburgh or Pocahontas coals could not develop its capacity without additional capital expenditures when burning river anthracite.

The solid fuels in pulverized form can generally compete with oil or even natural gas except in especially well-favored localities where gas or oil prices might be very low, or where the gas might be a waste product which has to be disposed of anyway, as for example blast-furnace gas in a steel plant.

Low-grade solid fuel, like lignite or river anthracite or anthracite culm, can be utilized in certain localities more economically than high-grade fuels handicapped by higher mine or freight charges. Oil-still residues, pitches, and petroleum cokes, although not considered in this analysis, have proved economical in many cases. The comparative economy of the various fuels considered may be approximated from Figs. 14 and 15 and Table 2.

Mid-West Machine Company Joins TAPPI

The distinction of being the first machine builder to become a Contributing Member of the Technical Association of the Pulp and Paper Industry belongs to the Mid-West Machine Company of Dayton, Ohio.

This company was organized in June, 1925, for the purpose of manufacturing equipment directly concerned with the secondary treatment of paper pulp of all kinds, and includes the Mid-West Hi-Speed beater, various types of pulping engines, continuous beating engines, agitators and mixing devices of various sorts.

The success of the Mid-West Machine Company in the paper industry has been an enviable one. Its products are used extensively throughout the industry.

Its officers are N. S. Talbott, president; W. V. Knoll, vice-president and general manager; Logan R. Herbert, treasurer; and Murray A. Smith, secretary. Mr. Knoll will be the company's representative in the Technical Association.

B. F. Perkins & Son To Erect Office Building

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., January 7, 1930.—The 1930 plans of the B. F. Perkins & Son concern of Willimansett include the erection of a two story office building thus releasing manufacturing space in the present buildings. The plans in detail have not as yet been announced.

Is Paper Made in the Beater?

The following letter points out that there are many points between the delivery of raw stock to the beater and its final delivery to the paper machine where an experienced paper maker adjusts the operation so that the stuff can be converted into a satisfactory sheet of paper. If the operator depends entirely on rules without using judgment based on experience he will be confronted with the many variables inherent to the raw materials and will fail to make a desirable sheet of paper.

By seeing first that the equipment is in good order and then adjusting the beater roll and later governing the Jordan operation an experienced paper maker can perform remarkable feats, getting uniform paper from variable raw materials. Although the author does not find the use of mechanical devices for measuring density in the beater to be useful he does believe it to be expedient to weigh the raw materials and thereby know how much stock he is working with.

The letter is edited out slightly so that the effect that the author wishes to make remains.—EDITOR.

Erving, Mass., January 6, 1930

Editor Technical Section:

Many things have been said and countless articles have been written bearing on the preparation of stock in the beater, and few of them, perhaps, will aid the paper maker of today.

To say that, "Paper is made in the beater," held true years ago when machines ran from 150 to 200 feet per minute; but with today's speed requirements, beaters and machines are up to production comparative with the trend of all modern lines, and we cannot hold that this mossy axiom is entirely true. It is not! The sheet of paper you pick up at the dry end today is made, or controlled and corrected, all along the line from digester to the reel—and beyond—assuming that the mill wants to keep its head above the battering waves of keen competition.

Yesterday, there were four or five beaters to prepare the stock for a certain machine; today, competition and power cost have driven the mill to do the same work with perhaps three beaters, possibly two. Do we not go back to the source of supply to overcome some of this handicap? Certainly! Do we not look to the modern paper machine for a little more assistance in handling stock that has had less time in the beaters? Most assuredly! Hence, the making of paper is not what it was in years gone by.

Now, to settle down. In the first place, stock is short or long, free or slow, or somewhere in between these accepted points when it reaches the beaters. Then, to meet the requirements of the several different grades of paper it requires vastly different treatment. Though I cannot enter upon the several grades, I take one to show my point. How do we proceed to obtain our end?

Before we start in earnest, let us look about the mill at the other equipment available which will give us a hand before the stock reaches the stuff box ahead of the screens. Possibly we have two Jordans, one between the beater chest and machine chest, and this one we assume is filled with wide bronze filling. Fine! Perhaps the one just ahead of the machine has a narrower filling. Still better!

We now examine and ascertain that all of our beaters have the same kind of filling and that the roll travel is exactly the same, or nearly so. That each roll is ground in so that it hits the bed-plate clear across and that all bars in the roll have equal contact with the bars of the bed-plate as they pass over. In other words, a perfect contact of steel to steel. This settled we are practically assured of uniform stock from all beaters.

We want a well closed sheet, thirty pound.

On examination of our stock we find that it is on the short, slow side. Some help from the cooking department, but we must be careful. We will fill our beaters to capacity. We'll weigh out the stock for just one beater to make sure of it. As we fill the beater we are told that it is of 1000 pounds capacity. 1000 pounds! We put it in.

Here is where a great deal of trouble arises. Consistency! One man works this kind of an instrument to place in the beater that will give us this information; another bobs up and tells us that he has the only device that will accurately tell us the consistency of the stock by simply clamping it on the side of the beater and letting it drag in the stock; even more, his device is so accurate that he can tell us if the right amount of size and alum have been added to the stock. Forget these fly-by-the-minute affairs! It takes too many men to keep them properly adjusted and working—and furthermore they do not fulfill expectations. Trust to the human eye and the human hand if you will know your stock and the consistency. If you want to be certain of your size and alum, go to the only true test. How about hydrogen ion control? Too many mechanical attachments, I have found, lead the beater engineer astray, by a slight change in stock or by instruments being jarred out of exactness.

As to beating stock, it has been my good fortune to work on every kind of paper except rag and box-board and, having tried many, I have never found any device that will tell me all the things I want to know about what is in a certain beater, or what the condition of the stock may be. Once I set a program for a certain kind of stock for a certain sheet of paper, I have found that it holds fairly true to run, unless there is a radical change in the stock delivered to the beaters, or an extreme change in the temperature. For size and alum, I depend on chemical tests, easily and simply made and absolutely accurate. Weighing the stock for one beater gives one a line on the consistency and thus far I have experienced no trouble having the beaters that follow filled uniformly.

Now to get back. We have the 1000 pounds of stock in the beater and find that still we have a sloppy mess when it is filled up to the logical line. Guess we better put in about 200 pounds more stock if we want to do anything in getting a slow sheet on the wire. And we do! Now we have a beater working perfectly. We'll give the machine tender a chance and so we'll not get it too slow or too short. The roll goes down on a stiff brush, the stock is rubbed hard on the sides of the beater and on the bottom, and the roll is battering it hard in front. We'll fill the other beaters and trust to the eye and feel for consistency, comparing it with the stock in the beater in which the weighed pulp was put.

What would have happened had we stopped at 1000 pounds in that beater? I merely ask this to correct an erronious assumption. Beaters are furnished to hold a certain amount of stock, but I have found that unless there is ground wood in the furnish that these beaters can be forced at least ten to twenty percent. Had we gone on with our sloppy stock, we would have had a free sheet, unless we had beaten it much longer than one should and I doubt then if we would have arrived at the proper stuff.

Time comes and we drop the first beaters. And here is where we put something beyond the beater room into use. The stock is not quite slow enough and a little long, just as we had expected and hoped. Hard lines! We'll jut the first Jordan on a good brush and back it up a little—make it work. Now, we'll touch up the machine Jordan so it will cut the fiber a little. Not enough yet, and the machine tender is doing all he can. There is no doubt now that we will have to come down a little harder on our beater rolls; but what are we going to do with the stock that we have in the chests? Did you ever try reversing the machine Jordan? Try it!

Next day, we figure up our costs. Too much spent for power! We've got to go back further than the beaters. We go back to the cooks, and if they can't help us we have one more resort—change something somewhere so that we can get perhaps a little different wood in our furnish.

This is just to point out how the whole mill has to work in unison—Co-operate—in order to produce the sheet of paper demanded today and still meet the competition of the present time. It can be done! It is being done! It must be done!

ELWIN J. OWENS, MEMBER TAPPI,
Asst.-superintendent, Erving Paper Mills

SECTION OF THE
COST ASSOCIATION OF THE PAPER INDUSTRY
Affiliated with
THE AMERICAN PAPER AND PULP ASSOCIATION
Edited by Thos. J. Burke C.A. Sec.-Treas.

Pulpwood Costs and Regional Competition*

By Charles W. Boyce[1]

All are conscious that the paper industry is today in a period of transition. But exactly what changes are in progress or how far reaching they will be, no one can say. Nor can we say that with any degree of accuracy until sufficient time has passed to give us perspective. We do know, however, the changes of the past. An analysis of them is perhaps our best guide to the future.

The paper mill of today represents the composite ideas of many centuries. Sporadic, unrelated ideas have given way to organized investigation, patiently directed into the vast unknown that lies before the industry. Enough information has been accumulated to permit a view, though vaguely, of certain phases of the industry in entirety. The full view permits appraisal and may lead to far reaching changes in commercialization that appear more sudden than they actually are.

The financial interpretation of these multiphased changes is of interest, I take it, to this association. The bursting of limits, both technical and economic, especially places heavy responsibilities upon the cost accountant, for his job is the analysis of their feasibility. The demands upon his knowledge, therefore, extend far beyond the cramped confines of his ledgers, into fields that border the unknown. I hope that my remarks may help to stimulate the growth of an imaginative approach to his studies of the cost of things that can not yet be seen too clearly.

The imaginative approach transcends systematization. It does not supplement nor does it complement; rather it proceeds. It is the antennae that prods here and there in the unexplored foreground, searching the way into which it may guide the slow moving body that follows after. It is essential to insure the future soundness of the industry.

Although a layman, yet fully appreciating the service of the accountant, I cannot help feeling that industrial changes are affecting not only the scope and the importance of cost work, but its whole conception and, in some instances, its viewpoint. Reactions seem to reach down from the finished product to the raw materials of the industry and there, largely, to pulpwood. It is concerning pulpwood and the play of economic forces upon its cost that I wish to speak.

The Changing Industry

The word "transition" is a generalization which is applied to express the more pronounced movements in a dynamic progression; it is actually the realization that things have advanced from one stage to another. Transition implies, therefore, a movement from a condition and a movement into a different condition. It embodies elements of both.

The present in the paper industry, a transition period, is both old and new. The transition has progressed so far that the old and the new, not yet reconciled, compete for supremacy; the one to hold, the other to attain. Both show evidence of winning; the old is holding and the new is attaining. Yet the far-reaching industrial shifts that are taking place count heavily for the new. Its gains point the way to the future, though imperfectly.

Within the decade the newsprint industry has shifted to Canada, the wrapping paper industry sags heavily southward and many phases of the sulphite pulp industry have sprung up on the Pacific Coast. These regional shifts have not been accompanied by corresponding movements in consumption. The new and the old, therefore, meet in common markets. Despite the handicap of distance and unfamiliar conditions, standard paper and pulp grades in the new regions have created a competition which the manufacturers of corresponding grades in the older regions have found difficult to meet. In many cases, however, the difficulty has been met and today we have the old as well as the new mills in full production.

Yet geographical shifting has been so rapid that already the old mills in the old regions, which were less than a decade ago the main source of production, are today tending to be marginal in many paper grades. High wood costs have forced many mills to discontinue pulp manufacture. But the price of imported pulp in the open market—not far different from the cost of manufacture in the old regions—has permitted these mills to continue paper manufacture—especially if they shift to the higher grades tends to unbalance markets to the detriment of all. Moreover, old mills shift willy-nilly from grade to grade in vain search of profit; their unstability is a serious threat to the prosperity of all mills.

Shifts in Use of Pulpwood

Behind the major shifts of the industry lie other shifts, less spectacular to be sure, but more fundamental, for they are the changes that make possible the major shifts. Change in the character and source of pulpwood is undoubtedly the most important. If we plot in a time series the amounts of pulpwood of different kinds consumed by paper mills in the United States over a long period of years, we will be struck by the rapid shift from spruce to other woods. Similarly, if we plot the amounts of pulpwood consumed in the major producing regions in a time series, we will be struck again by the rapid increases in relatively new regions. New woods and new regions are gaining rapidly. Up to the present the old woods and the old regions have not sacrificed their leadership but present trends indicate an approach of the time when the supremacy will change.

With the exception of groundwood, the pulps in the manufacture of paper are essentially of the same material—cellulose. Cellulose is a dominant constituent in all kinds of vegetable growth. It

* Delivered at Convention of the Cost Association of the Paper Industry, Wausau, Wis., Sept. 21, 1929.
[1] Acting Secretary, American Paper and Pulp Association.

occurs in different forms and amounts and the vegetation in which the forms and amounts are more suitable for paper manufacture have been most thoroughly used in the industry. But the technologist now finds that the great variety of forms in which cellulose appears in different types of vegetation, may be altered to a remarkable degree toward a common form adaptable for paper manufacture. The extent to which the application of treatment to effect the alteration is feasible depends upon comparative costs.

We can set up, therefore, two comparative columns; in one column would be recorded the cost of using a pulpwood which requires little treatment; in the other, the cost of using a pulpwood which requires extensive treatment after pulping. In the first, the wood cost is high, but the treatment cost is low. In the other, the wood cost is low and the treatment cost high. Speaking broadly, these comparative columns are the most important in the industry today.

Research underlies these comparisons. Organized investigation has opened up new possibilities in the use of wood. In fact, the great strides which have been made lead us to believe that eventually, within certain limits, almost any kind of paper can be made from any kind of wood. Which woods will be used and from which regions they will be drawn will be decided by costs. Here the accountant and technologist meet.

Wide spreads in pulpwood costs show the possibilities of cost reduction on the one hand, and on the other they indicate in a measure the economic pressure that is developing to extend the limits of pulping. Reports to the Woodlands Section in 1928 covering about one-half of the pulpwood consumption in the United States, show weighted average costs from $17.88 per cord in New York and $17.50 per cord in New England, varying to as low as $5.60 per cord in Louisiana and Texas. In Michigan the average cost of wood was $13.48, in Wisconsin and Minnesota $12.97, in the Appalachian States $15.56, in the South Atlantic States $9.18 and in the Pacific Coast States $11.44. The price of wood in New York State is approximately three times the price in Louisiana and Texas. It is also approximately three times greater than the price of slabs and mill waste on the Pacific Coast, the use of which is growing rapidly.

If we assume that two cords of wood are required for the manufacture of one ton of wrapping paper, for instance, the difference between wood costs in New York and in Louisiana would amount to $24.00 per ton. With a paper selling in the large consuming markets of the country at, say, $95.00 a ton, it is easily apparent that the difference in wood costs amounting to more than one-fifth of the total selling cost of the finished paper is too great a spread to be offset by ordinary means. It would take care of any reasonable transportation charge on paper shipments in the United States and, at the same time, leave a substantial balance to compensate for differences in other items of manufacture. Mills using slab wood on the Pacific Coast have the same advantage in costs.

The differentials in wood costs in the South affect only wrapping paper and boards of a high fiber content at the present time. On the west coast, however, the mills using slab wood are entering in a commanding way the sulphite pulp and paper markets. Although the supplies of spruce on the Pacific Coast are relatively limited, the hemlock supply is ample to support a large output of sulphite pulp. Furthermore, western hemlock is suitable for grinding up to 50 per cent of the furnish.

Significance of Cost Differentials

By contrasting the importance of cost reduction with the possibilities which the technologist is developing—in fact just beginning to develop—a clue may be had to the vast importance of the differentials in regional pulpwood costs. Formerly when spruce was the dominant wood and standard mill equipment and process prevailed, the industry went through a long period of cost reduction. But in this, the present extreme urge did not exist, for consumption of paper was rapidly expanding. Competition existed, of course; it was devastating at times, but its intensity cannot be compared with that of the present. The domestic manufacturer faces an entirely new situation today. Although consumption is increasing, its per cent rate is falling off. The large producing units have a greater elasticity which covers minor increases in demand. Quantitatively no new paper mills are needed in most grades. But the actual situation is not so static; it is enlivened, its progress follows apace the rapid expansion in the use of new and cheaper woods. Stimulated by the possibilities, new mills are bound to be built. Eventually they will replace the weaker, old mills. This competition is in reality a race of technologists for the benefit of the cost men whose passion can be satisfied only if the goal is lowered cost.

Regional competition leads directly into a world wide competition which centers, as far as pulp is concerned, in the American market. The rapid expansion of Canadian production is based upon United States consumption. To a smaller, but to no less important extent, expansion in Scandinavia hinges upon the American market. With domestic pulp produced from spruce, balsam, fir and hemlock, all of which have long been subjected to depletion, imports have grown so that today the United States is actually dependent upon imports of one kind or another for over one-half of the materials needed to manufacture its paper consumption.

The urge to lower costs has spurred the technologists to new discoveries which place the United States in a position not only to gain back the control of the domestic market, but also to win a commanding position in world markets. By these discoveries the technologist has increased the pulpwood supplies in the United States many fold. Furthermore, he has changed the emphasis in regional competition from manufacturing costs to pulpwood costs and the regional and even the world distribution of the industry tends to be influenced by a new series of wood costs. Eventually it will be influenced by the costs of growing wool.

The Cost Reduction Urge

Up to this point I have attempted to emphasize the wide spreads in regional pulp wood costs and their effect upon the regional distribution of the industry. So long as we are talking about wood supplies that are now available, this does not require a great deal of imagination. We must not forget, however, that we are dealing with an intensely dynamic progression which is subjected to a number of major transitionary movements. A mill built today must be so planned that it will meet not only today's conditions, but those that will exist 30 years or more in the future. Whether we know it or not, we are considering not only paper manufacture and consumption present and future, but a host of other functions which are closely related, enormously important among which is the use of land to grow pulpwood.

But before entering a discussion of pulpwood growth, let me emphasize costs once again, for costs underlie the whole pulpwood situation. We can visualize a host of combinations of economic elements on the one hand; on the other is a host of brains. The latter seeks advantages in the management of the former. The advantage materializes as profits and these in turn are derived largely from the application of the most efficient management to economic elements in a far flung competition in which influences from the whole world enter. Brains are seeking low costs; more than that, they are seeking the lowest costs.

As we review the history of the industry we can see the beginning and development of the movement to lower costs. Many think that cost reduction as a general movement reached its peak in mass production. I doubt it. Mass production was simply a first flush. As long as the present economic order lasts, cost reduction will be a dominant function in business. Even monopoly private or governmental, must face it. Great possibilities exist in more complete utilization of materials and no imaginative person can forever remain content with a manufacturing procedure that is largely adding water here and taking it out there. Industry has only begun to concentrate on costs.

The reason for the flow of the industry toward low cost situation hinges upon a number of factors which in transition have now progressed to a well recognized stage. Important in these, is the establishment of a condition of chronic over-production which demands, for outstanding success, more careful management of competitive factors. The application of management to factors that exist is a problem of reality, but the application of management to factors that do not yet exist requires an imagination of a high order. Such was the imagination of the Carnegies, the Rockefellers and the Hills who could look beyond the horizon and who, seeing perhaps nothing more than dim possibilities, had faith to build toward them in a time when conditions were not vastly different from those that exist today. Such must be the imagination of the paper manufacturer whose name will command the respect of all 30 years from now. Whether we know it or not, he is starting his building today. More often than not, his foundation is being laid by sound investments in forests.

There are no sentimental reasons why the paper manufacturer uses wood, rags or other fibers as raw materials. Far from it; he uses the materials from which he can make a product of a desirable quality at the lowest possible cost. If some other material is found to be less costly, he will not hesitate to change. Wood, now the fundamental raw material for paper manufacture, is the cheapest material available at the present stage of technology. I believe it will remain so.

We cannot think of future wood costs without considering forest depletion. For decades past, propagandists have been prophesying timber shortages. Their dire prophecies have not come true; nor will they. In their prognostication they have assumed that the consumption of wood in the United States will always remain at its present high level; they have disregarded the relationship between price and demand; that increased prices in any elastic commodity reduce demand. As the original supply of timber is depleted, use concentrates in low grade second growth timber. In the use of second growth, particularly the smaller sizes, no other industry can compete with the paper industry for in no other industry is the product that can be manufactured from such low grade material so valuable.

Future Pulpwood—Forestry

A vertically integrated pulp and paper plant, because of its enormous investment, demands long period operation for proper amortization. Blocking up enough timber to support its requirements is a proven necessity; and it is expensive. The enormity of original and accumulated costs in a timber supply, sufficient to permit amortization, is forcing a new conception of the relationship between the forest and the industry. This conception is that forests grow. By managing forest land for successive crops of wood so large investments are not necessary, and, furthermore, perpetual, economic operation may be attained upon sustained yield.

Moreover, only by forest management is constant cost operation possible. If no provisions are taken to renew the forest after cutting, local timber depletion forces longer and longer rail hauls. Reports to the Woodlands Section, for instance, indicate a weighted average freight charge for six New York mills of $6.98 per cord in the first quarter of 1929. In the southern states the corresponding transportation charge amounted to $1.45 per cord and on the Pacific Coast it was $2.03 a cord. Two decades ago the freight charges for New York mills were under $2.00 per cord. The spread of approximately $5.00 per cord would more than pay the cost of producing pulpwood in the neighborhood of the mill in New York. If a mill depends only upon existing timber it must surely face increasing costs that will eventually jeopardize its prosperity.

Costs in Forestry

Forestry is a typical matter of costs and returns; only in its technic is it unique and even there the uniqueness is largely overestimated. But today forestry is just beginning. On the one hand, it must compete with virgin timber from afar and on the other hand it competes with nearby accidental second growth in the production of which but little cost was accumulated. As these competing forests are depleted, man grown forests gain. Likewise, the higher prices resulting from decreased supplies permit an increasing intensity in forest management—the accumulation of greater costs in growing timber. At the beginning, however, only the most simple and inexpensive measures are justifiable without unnecessary gambling upon price increases in the future, the extent of which cannot be estimated. The degree of intensity of forest practice should at no time exceed current possibilities of costs and returns. Nothing more is needed to bring about a stabilized forest business in the due course of economic development.

Under these conditions it is obvious that the first efforts to produce timber should be confined to the best chances of producing it in the simplest and cheapest manner. Today all lands except those which are already re-stocked and are accessible to markets and highly fertile are sub-marginal. The margins, however, will be pushed out rapidly, as more companies are forced to depend upon man grown timber. As margins expand land values once established will tend to offset the advantages of the best chances over the somewhat poorer chances, as in agriculture. But today the best forest land in most regions is valued at no more than the poorest, and furthermore, the best forest land in a poor region may actually exceed in value the best forest land in a good timber growing region.

Such a condition can not long exist. Already the paper industry and the small saw mills are tending to create in certain localities, a demand for the best forest producing land which will lead to increased land values. It is probably safe to say that the value of good forest land is today at its lowest point and it follows that the mills which now block up holdings of land that have the best possibilities for profitable forest management, are placing themselves in a position to take advantage of future land value increases and of providing indefinitely for pulpwood at costs not greatly exceeding those which exist in the new regions today. Furthermore, the possibilites of getting the best land are better today than they ever will be, for now few owners recognize the value of their holdings.

Yet this is not all. It requires no great stretch of imagination to see the time approaching when, because of its cost, the use of round wood in the industry will be curtailed. Ordinarily, all costs of forest administration and of logging must be charged against pulpwood when roundwood is used, for it is usually the only product cut. When saw mill waste is used for pulpwood these charges are distributed among the products from which the waste is derived. The more complete utilization effected by the use of the waste increases the percentage of wood that can be sold. The costs chargeable to each are correspondingly reduced for a positive return is derived from a larger proportion of the timber which is purchased or for which expenditures have been made in its growth. In a forest, for instance, cut solely for lumber, there is a large waste estimated at about 50% of the total volume. The returns from the sale of the used wood must cover the cost of all of the wood. Any use of the waste which gives an additional return obviously reduces the unit cost of producing the lumber.

Realization of these facts is leading to the establishment of the so-called integrated wood-using industries. Integration of wood-using industries is simply the co-ordination of various types of wood-using plants under one management to permit the highest use of forest material. Thus, a saw mill, a lath mill, a small dimension stock mill and a pulp mill could be combined. Logs suitable for the higher grade products would go to the unit which could manufacture them; those suited for low grade products would go to their proper unit and the waste from all of the manufacturing units, and much material which would ordinarily be left in the woods as unmerchantable, would go to the pulp mill for pulping. Under ideal conditions waste could be confined to the bark and to the lignin in the wood that is pulped.

Cost Section

By partial integration as now practiced in the south and the west, pulpwood ready for chipping, i.e., slabs and mill waste, costs between $5.00 and $6.00 per cord. In the west integration permits a saving in wood costs of from $3.00 to $5.00 per cord. In the South the saving is not so great because of the large supply of wood held by small owners who are willing to sell it if they can realize only enough to cover their labor costs—probably a temporary condition.

A New View Point

In the paper industry I suppose the accountant views costs from the point of view of finished paper and all costs are related to its financial returns. Under conditions just described the costs of forestry and forest utilization can not be so related. They must be related to all the products of the forest or to the land. This is a somewhat different conception of accounting in the industry.

We can look forward to radical changes in the paper industry. Undoubtedly there will be inventions which will permit lower manufacturing cost, but it is my impression that the greatest reduction of cost will occur in the use of wood. The possibilities are still vague; they can be visualized only from an imaginative point of view. Nevertheless, they exist and because they do exist they should be reckoned in the cost accountant's work.

After all, the accountant's work consists of more than compiling past events; it does, and it should to a greater extent, deal with futures. Schooled in the records of the past, who better than the accountant is able to foretell the future? No one—if he has sound imagination.

Paper Mills Resuming Operations

[FROM OUR REGULAR CORRESPONDENT]

CARTHAGE, N. Y., January 4, 1930.—A number of the paper mills of this section have been taking inventories and otherwise preparing for a busy season ahead. The Taggart Bag Mill at West Carthage, operated in conjunction with the plant of the Champion Paper Company, will resume work January 6 following a shut down which started on December 23. The mill employs about 60 women and the curtailment is said to be customary at this time of the year.

The Hinde & Dauch Paper Mill at Watertown is expected to resume operations early next week after being shut down for several days. The plant has been shut down since last Saturday and about 85 men are affected. Although lack of orders was given by officials as the reason it is understood that the curtailment is primarily for the purpose of taking the annual inventory. Announcement from the main plant in Sandusky, Ohio, said the shut down would last about one week.

Suspension of operations this week in the plant of the Keystone Wood Chemical and Lumber Corporation at Glenfield has thrown several hundred hands out of work for an indefinite period. A few weeks ago the business was placed in the hands of receivers in an effort to tide it over its present difficulties and the future plans of these men could not be learned. It is said that the curtailment will only be for a week or two in order to make an inventory of the business.

Change in Carthage Machine Co.

MONTREAL, Que., January 6, 1930.—Another former United States concern has come under complete Canadian control through the sale by Carthage Machine Company, of its interests in the Carthage Machine Company of Canada Ltd., Belleville, Ontario, to R. G. Graham, who is now its president. A. K. Hinds, previously head of both companies, has also sold his interest and resigned as president and director of the Canadian company.

Other officers of the Canadian company are: H. W. Ackerman, vice-president and F. S. Wilson, secretary-treasurer. W. R. Tidmarsh is manager of the large and well-equipped plant at Belleville.

New York State Reforestration Plan

[FROM OUR REGULAR CORRESPONDENT]

ALBANY, N. Y., January 4, 1930.—Details of the reforestration plan provided under the Hewitt law have been completed by the State Conservation Commission and submitted to the reforestation commission of which Senator Hewitt is chairman. The plan provides for the acquisition and planting of 1,000,000 acres of unused lands in the fifteen year period ending on December 31, 1944. Under the program mapped out by the Conservation Commission $500,000 will be appropriated in 1930 and 1931 in addition to the appropriations to be set up in the constitutional amendment which becomes effective in 1932.

Beginning at that time $1,000,000 would be appropriated and the appropriation would be increased $200,000 a year to a maximum of $2,000,000 in 1937. This maximum would be continued for six years making the last appropriation in 1942. The program calls for the acquisition of 50,000 acres a year from 1930 to 1933 inclusive and of 100,000 acres a year from 1934 to 1941 inclusive. It also provides for the reforestration of 13,000 acres a year in 1930 and 1931; of 21,000 acres in 1932 and 30,000 acres in 1933. From that time on 100,000 acres will be reforested for the next four years and in 1944 a total of 133,000 acres will be reforested. Carrying out the program will require the acquisition of a number of new nurseries of at least 100 acres each. The estimated cost of the land and equipment for these nurseries is $50,000 each.

In discussing the State of New York's enlarged reforestration program inaugurated during the past year Conservation Commissioner Alexander Macdonald said:

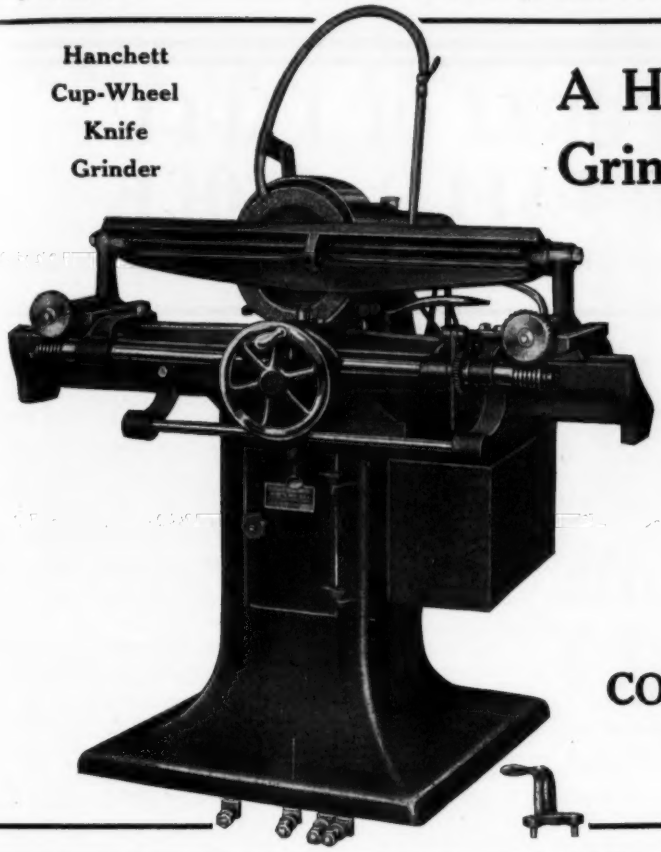
"The legislature of 1929 enacted two laws of great importance to forest conservation. One of these authorized the Conservation Department to acquire land in lots of not less than 500 contiguous acres outside of the forest preserve counties which are adapted for reforestation and establish thereon forests for kindred purposes. A companion law encourages the planting of county forests by providing that the state will match appropriations made by counties for the acquisition of land and planting trees on it up to $5,000 a year for any one county. It is estimated that there are upwards of 1,000,000 acres of land suited to the planting of state forests in lots of 500 contiguous acres, or more, and an even larger acreage suitable for county forests.

"To acquire and plant such an area in from fifteen to twenty years as is proposed is a larger proposition than has ever before been undertaken in this country and for which adequate preparation must be made if it is to be carried to success. Since the enactment of these laws the Conservation Department has established two new nurseries which will add 20,000 trees a year to the output of the department's nurseries which is now 40,000,000 trees annually.

"To acquire 1,000,000 acres of land in twenty years will require an average annual addition to the state's holdings of 50,000 acres with the searching of titles and other incidental legal work. Thus far the state has made contracts for the purchase of over 6,000 acres of which it has been possible up to the present time to secure the approval of title to 1,951 acres at an average cost of $3.08 an acre, the open portions of which have been planted. It is obvious therefore that an essential preliminary to getting this great project properly under way is for the department to build up a suitable organization for acquiring this land in sufficient quantity to accomplish the work within the estimated period. The first year's purchase of land will have to be more than doubled next year after which it will remain at 75,000 acres a year for ten years.

"With the two new nurseries established this year the maximum output of the state's nurseries by 1931 will be 60,000,000 trees a year. This year's output was 25,000,000 trees, only 1,660,000 of which were planted on the state forest area. To carry through the state's enlarged reforesting program within twenty years the present nursery capacity will have to be doubled within the next ten years and machinery provided for the acquisition of land."

Hanchett Cup-Wheel Knife Grinder



A High Grade Knife Grinder at Low Cost

Whenever the quantity or sizes of knives to be ground do not warrant the purchase of one of our heavy duty grinders we recommend this machine.

Write for Bulletin No. 4

COVEL-HANCHETT CO.,

BIG RAPIDS, MICH., U. S. A.

Branch: SEATTLE, WASH.

NEW ROGERS TYPE R

SECTIONAL WHEEL KNIFE GRINDER

Widely used for grinding paper & Chipper Knives

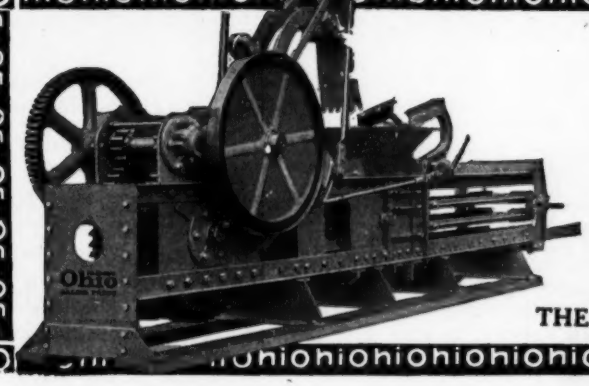
Write for bulletin

SAMUEL C. ROGERS & CO.
222 Dutton Ave. Buffalo, N. Y.

MORE WATER PER POUND OF PIPE IN TAYLOR SPIRAL PIPE

THE LIGHT WEIGHT AND SPIRAL CONSTRUCTION OF TAYLOR SPIRAL PIPE ENABLES IT TO CARRY MORE WATER PER POUND OF PIPE THAN ANY OTHER FORM OF PIPING. THIS MEANS A REAL SAVING TO USERS OF TAYLOR SPIRAL PIPE, MADE IN SIZES 3" TO 42" DIAMETER AND LENGTHS UP TO 40' GALVANIZED OR ASPHALT COATED.

TAYLOR FORGE & PIPE WORKS — CHICAGO
P. O. BOX 485, CHICAGO 50 CHURCH ST., NEW YORK



FAMOUS **Ohio** *BALING PRESSES*

The nature of this baler is such that it makes a neater and more compact bale. Every bunch of scrap is packed in by a powerful blow of the plunger.

3 Sizes to meet all requirements

THE OHIO CULTIVATOR CO., Bellevue, O.

IMPORTS OF PAPER AND PAPER STOCK

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING JANUARY 4, 1930

SUMMARY

Cigarette paper ..... 329 cs.
Wall paper .....3 pkgs., 239 bls., 25 cs.
Paper hangings .....32bls., 9 cs.
News print .....6578 rolls
Printing paper .....70 bls., 169 cs.
Packing paper .....132 rolls, 149 bls., 171 cs.
Wrapping paper .....25 bls., 73 cs.
Decalcomania paper .....17 cs.
Drawing paper .....31 cs.
Filter paper .....72 bls., 24 cs
Tissue paper .....125 cs.
Colored paper .....27 cs.
Photo paper .....79 cs.
Baryta coated paper .....201 cs.
Gold coated paper .....0 cs.
Metal paper .....4 cs.
Surface coated paper .....176 cs.
Silk paper .....18 cs.
Writing paper .....25 cs.
Painted paper .....16 cs.
Transparent greaseproof paper .....23 cs.
Stencil paper, etc. .....68 cs.
Coutchouc paper .....12 cs.
Straw paper .....51 blds.
Card board .....25 pkgs., 60 cs.
Miscellaneous paper .....
..... 1 roll, 198 pkgs., 118 bls., 153 cs.

CIGARETTE PAPER

Standard Products Corp., Berengaria, Southampton, 13 cs.
De. Manduit Paper Corp., Waukegan, Harve, 316 cs.

WALL PAPER

A. C. Dodman Jr., Inc., Oscar II, Copenhagen, 3 pkgs.
R. F. Downing & Co., Minnetonka, London, 4 bls.
R. F. Downing & Co., Berengaria, Southampton, 1 cs.
A. C. Dodman, Jr., Inc., Berengaria, Southampton, 7 bls.
F. A. Binder, Berlin, Bremen, 40 bls., 1 cs.
F. J. Emmerich, Megantic, Liverpool, 13 bls., 3 cs.
S. Stern Stiner Co., Milwaukee, Hamburg, 2 bls.
J. E. Bernard & Co., Milwaukee, Hamburg, 85 bls., 8 cs.
Irving Trust Co., Milwaukee, Hamburg, 3 cs.
F. J. Emmerich, Milwauke, Hamburg, 82 bls.
C. Grimmer & Son, Milwaukee, Hamburg, 1 cs.
Globe Shipping Co., Milwaukee, Hamburg, 8 cs.
Wedeman Godknecht & Lally, Milwaukee, Hamburg, 6 bls.

PAPER HANGINGS

W. H. S. Lloyd & Co., Minnetonka, London, 32 bls., 3 cs.
Whiting & Patterson Co., Inc., Berengaria, Southampton, 4 cs.
F. L. Kramer & Co., Berengaria, Southampton, 2 cs.

NEWSPRINT

Parsons & Whittemore, Inc., Berlin, Bremen, 673 rolls.
Perkins Goodwin & Co., Milwaukee, Hamburg, 99 rolls.
Bank of Montreal, Rygia, Cornerbrook, 5543 rolls.
Stora Kooperberg Corp., Gripsholm, Gothenburg, 62 rolls.
Perkins Goodwin & Co., Hagen, Hamburg, 201 rolls.

PRINTING PAPER

P. Puttman, De Grasse, Havre, 16 cs.
Keller Dorian Paper Co., De Grasse, Harve, 16 cs.
E. Dietzgen & Co., N. Amsterdam, Rotterdam, 70 cs.
Tice & Lynch, N. Amsterdam, Rotterdam, 3 cs.
Parsons & Whittemore, Inc., Berlin, Bremen, 70 bls.
C. Steiner, Berlin, Bremen, 14 cs.
J. Beckhard & Co., Berlin, Bremen, 4 cs.
F. C. Zuhlke, Pennland, Antwerp, 1 cs.
P. Puttman, Pennland, Antwerp, 6 cs.
J. Henschel, Milwaukee, Hamburg, 7 cs.
E. Dietzgen & Co., Milwaukee, Hamburg, 23 cs.
Keller Dorian Paper Co., Waukegan, Harve, 9 cs.

PACKING PAPER

Wilkinson Bros. & Co., Inc., Oscar II, Oslo, 47 bls, 132 rolls.
Hensel Bruckman & Lorbacher, N. Amsterdam, Rotterdam, 3 cs.
J. P. Heffernan Paper Co., Pennland, Antwerp, 102 bls.
Gevaert Co. of America, Pennland, Antwerp, 2 cs.
American Express Co., Milwaukee, Hamburg, 166 cs.

WRAPPING PAPER

Houbigant, Inc., Berengaria, Southampton, 1 cs.
M. M. Cohen, Berlin, Bremen, 6 bls.
Sylviania Industrial Corp., Pennland, Antwerp, 2 cs.
Walker, Goulard, Plehn Co., Milwaukee, Hamburg, 18 bls.
C. Steiner, Milwaukee, Hamburg, 57 cs.
Keller Dorian Paper Co., Waukegan, Harve, 13 cs.
C. Steiner, Hagen, Hamburg, 21 bls.

DECALCOMANIA PAPER

C. W. Sellers, Berlin, Bremen, 13 cs.
C. W. Sellers, Milwaukee, Hamburg, 4 cs.

DRAWING PAPER

Favor Ruhl Co., Minnetonka, London, 8 cs.
H. Reeve Angel & Co., Inc., Minetonka, London, 23 cs.

FILER PAPER

H. Reeve Angel & Co., Inc., Minnetonka, London, 24 cs.
E. Fougera & Co., Berengaria, Southampton, 34 bls.
A. Giese & Son, Aurania, Southampton, 38 bls.

TISSUE PAPER

W. J. Byrnes Co., Berengaria, Southampton, 3 cs.
Atlantic F'd'g Co., Milwaukee, Hamburg, 122 cs.

COLORED PAPER

S. Gilbert, Berlin, Bremen, 14 cs.
——, Berlin, Bremen, 13 cs.

PHOTO PAPER

Rectigraph Co., Liberty, Havre, 75 cs.
J. J. Gavin & Co., Berengaria, Southampton, 2 cs.
Medo Photo-Supply Co., Aurania, Southampton, 2 cs.

BARYTA COATED PAPER

Globe Shipping Co., Berlin, Bremen, 201 cs.

GOLD COATED PAPER

F. Murray Hill Co., Berlin, Bremen, 50 cs.

METAL PAPER

H. D. Catty & Co., Milwaukee, Hamburg, 1 cs.
Overton & Co., Milwaukee, Hamburg, 3 cs.

SURFACE COATED PAPER

Gevaert Co. of America, Pennland, Antwerp, 118 cs.
P. Puttman, Pennland, Antwerp, 56 cs.
R. H. Macy & Co., Milwaukee, Hamburg, 1 cs.
Phoenix Shipping Co., Milwaukee, Hamburg, 1 cs.

SILK PAPER

Meadows Wye & Co., Innoko Roterdam, 18 cs.

WRITING PAPER

Japan Paper Co., De Grasse Havre, 1 cs.
D. C. Andrews & Co., Berengaria, Southampton, 1 cs.
Japan Paper Co., Berengaria, Southampton, 7 cs.
Guibout Freres, Berengaria, Southampton, 16 cs.

PAINTED PAPER

J. E. Bernard & Co., De Grasse, Havre, 16 cs.

TRANSPARENT GREASEPROF PAPER

Central Hanover Bank & Trust Co., Milwaukee, Hamburg, 23 cs.

STENCIL PAPER, ETC.

Arlac Dry Stencil Co., Milwaukee, Hamburg, 68 cs.

COUTCHOUC PAPER

American Express Co., Milwaukee, Hamburg, 12 cs.

STRAW PAPER

D. M. Hicks, Inc., Pennland, Antwerp, 126 bls.
American Express Co., Keifuku Maru, Hamburg, 51 blds.

CARD BOARD

J. L. Goldberg, Inc., N. Amsterdam, Rotterdam, 25 pkgs.
American Express Co., Milwaukee, Hamburg, 60 cs.

MISCELLANEOUS PAPER

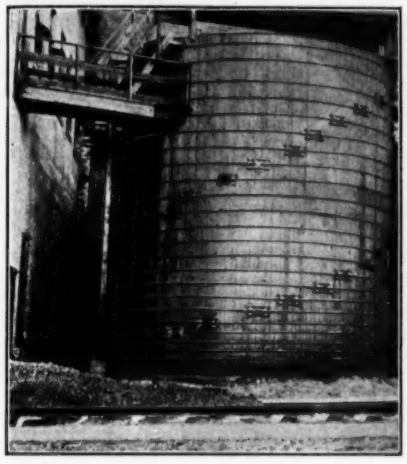
Keller Dorian Paper Co., Liberty, Havre, 10 cs.
F. B. Vandergrift & Co., De Grasse, Havre, 1 cs.
Hensel, Bruckman & Lorbacher, De Grasse, Havre, 6 cs.
Titan Shipping Co., De Grasse, Havre, 11 cs.
J. E. Bernard & Co., De Grasse, Havre, 3 cs.
Steiner Paper Corp., N. Amsterdam, Rotterdam, 84 cs.
J. P. Heffernan Paper Co., N. Amsterdam, Rotterdam, 6 bls.
Japan Paper Co., N. Amsterdam, Rotterdam, 10 cs.
Keller Dorian Paper Co., Berengaria, Southampton, 13 cs.
H. Lange, Berlin, Bremen, 8 cs., 1 roll.
International F'd'g. Co., Berlin, Bremen, 7 cs.
Perkins Goodwin & Co., Milwaukee, Hamburg, 67 bls.
Japan Paper Co., Gripsholm, Gothenburg, 5 bls.
J. P. Heffernan Paper Co., Gripsholm, Gothenburg, 12 bls.
Manufacturers Trust Co., H. Jaspar, Antwerp, 30 bls., 198 pkgs.

RAGS, BAGGINGS, ETC.

E. A. Stone, Inc., Sud Pacifico, Havana, 14 bls. rags.
Intl. Germanic Trust Co., Liberty, Havre, 97 bls. rags.
Castle & Overton, Inc., Liberty, Havre, 60 bls. bagging.
N. Y. Trust Co., Liberty, Havre, 58 bls. rags.
Bank of New York, Liberty, Havre, 37 bls. rags.
J. Cohen & Son, Liberty, Havre, 23 bls. rags.
V. Galaup, Liberty, Havre, 48 bls. rags.
Katzenstein & Keene, Inc., Liberty, Havre, 212 bls. rags.
Katzenstein & Keene, Inc., Liberty, Dunkirk, 14 bls. rags.
V. Galaup, Liberty, Dunkirk, 5 bls. rags.
A. W. Fenton, Inc., Liberty, Dunkirk, 23 bls. rags.
Darmstadt, Scott & Courtney, Lepanto, Antwerp, 74 bls. flax waste.
E. J. Keller Co., Inc., Lepanto, ——, 234 bls. flax waste, 70 bls. rags.
G. W. Millar & Co., Lepanto, Antwerp, 112 bls. flax waste; 64 bls. thread waste.
D. M. Hicks, Inc., Lepanto, Antwerp, 180 bls. flax waste.
Irving Trust Co., Lepanto, Antwerp, 48 bls. flax waste.
Castle & Overton, Inc., Lepanto, Antwerp, 105 bls. rags.
Van Oppen & Co., Lepanto, Antwerp, 378 bls. rags.
C. R. Spence & Co., Transylvania, Gasgow, 52 bls. rags.
Philadelphia National Bank, Transylvania, Glasgow, 122 bls. rags.
Brown Bros. & Co., Transylvania, Glasgow, 111 bls. rags.
Baring Bros. & Co., Transylvania, Glasgow, 131 bls. flax waste.
Castle & Overton, Inc., Oscar II, Copenhagen, 58 bls. new cuttings.
Manufacturers Trust Co., Oscar II, Copenhagen, 87 bls. rags.
New York Trust Co., N. Amsterdam, Rotterdam, 107 bls. rags.
E. Mayer, Innoko, Rotterdam, 56 bls. rags.
E. J. Keller Co., Inc., Innoko, ——, 59 bls. rags.
Equitable Trust Co., Megantic, Liverpool, 18 bls. rags.
Manufacturers Trust Co., Pennland, Antwerp, 37 bls. flax waste.
D. M. Hicks, Inc., Pennland, Antwerp, 126 bls. flax pulp.
E. Mayer, Keifuku Maru, Hamburg, 61 bls. rags.
Robert Blank, Keifuku Maru, Hamburg, 194 bls. rags.

(*Continued on page 74*)

TANKS THAT LAST



Acid tank at Nekoosa-Edwards Paper Company, Pt. Edwards, Wis.

Kalamazoo tanks are made of best obtainable tank woods, built right, guaranteed tight.

Sixty years experience building Blow Pits, Acid Tanks, Stuff Chests, Agitators, etc., for the Paper Trade.

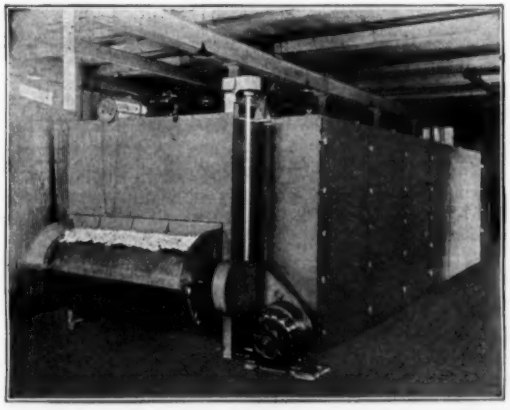
Ask about our new Tile Tanks for stock or bleach.

Kalamazoo Tank & Silo Co., Kalamazoo, Mich.

FIDALGO DRYING SYSTEMS

FOR

CHEMICAL AND GROUNDWOOD PULP



Shredded Pulp Dried With Same Strength as Wet
Uniform Dryness Guaranteed

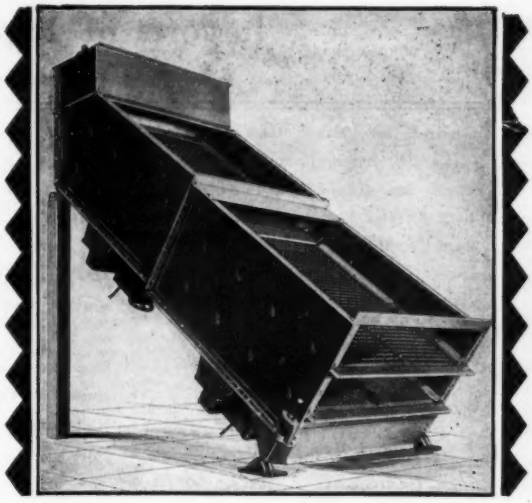
Insures Cleanliness of Bleached Pulp.

Economy for Producer and User.

Lowest Steam Consumption.

Technical Economist Corporation

122 East 42nd Street, New York, N. Y.



Hum-mer Electric CHIP SCREEN

Thorough removal of sawdust and fine particles!

Small floor space required!

Low power consumption!

Immense capacity!

Fully adjustable screening angle and vibration!

No lubrication!

No destructive shaking of supports or buildings!

No belts or pulleys!

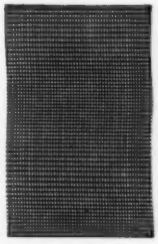
Trouble-free operation!

These are the features which make the Wood Chip Hum-mer a profitable investment for pulp and paper mills!

Write for Catalogue 54-P

The W. S. Tyler Company

Cleveland, Ohio



TYLER

FOURDRINIER
CYLINDER
CORDUROY

WIRES

Imports of Paper and Paper Stock

(*Continued from page 72*)

Castle & Overton, Inc., Hagen, Hamburg, 75 lbs. rags.
Equitable Trust Co., Hagen, Hamburg, 43 bls. rags.
A. W. Fenton, Inc., Hagen, Hamburg, 24 bls. rags.
Chemical Bank & Trust Co., Hinoy, Barcelona, 98 bls. rags.
Fidelity Trust Co., Hinnoy, Barcelona, 37 bls. rags.
Intl. Germanic Trust Co., Hinnoy, Barcelona, 190 bls. rags.
Bank of New York, Honnoy, Barcelona, 66 bls. bagging; 45 bls. cotton waste.
Irving Trust Co., Vestvard, Barcelona, 45 bls. bagging; 216 bls. rags.
Chemical Bank & Trust Co., Birk, Genoa, 30 bls. flax waste.
Merchants National Bank, N. Amsterdam, Rotterdam, 17 bls. rags.

OLD ROPE

Brown Bros. & Co., Liberty, Dunkirk, 114 coils.
W. Stack & Co., Lepanto, Hull, 95 coils.
Brown Bros. & Co., Lepanto, New Castle, 137 coils.
Brown Bros. & Co., Oscar II, Copenhagen, 76 coils.
Brown Bros. & Co., Oscar II, Oslo, 43 coils.
W. Steck & Co., N. Amsterdam, Rotterdam, 48 coils.
International Purchasing Co., N. Amsterdam, Rotterdam, 36 coils.
Brown Bros. & Co., Pennland, Antwerp, 57 coils.
Guaranty Trust Co., Hinncy, Marseilles, 41 coils.
Intl. Germanic Trust Co., Hinnoy, Barcelona, 37 coils.

CASEIN

National City Bank, Sud Pacifico, B. Ayres, 1036 bags, 49770 kilos.

WOOD PULP

Atterbury Bros., Inc., Oscar II, Oslo, 2250 bls. wood pulp, 450 tons.
National City Bank, Oscar II, Oslo, 1000 bls. wood pulp, 125 tons.
Pagel Horton & Co., Inc., Pennsylvania, Munksund, 2400 bls. sulphate.
J. Andersen & Co., Pennsylvania, Hernosand, 5850 bls. sulphate; 690 bls. sulphite.
J. Andersen & Co., Pennsylvania, Stugsund, 1000 bls. sulphite.
Bulkley, Dunton & Co., Pennsylvania, ——, 2875 bls. wood pulp.
Lagerloef Trading Co., Hallaren Helsingfors, 1588 bls. sulphite.
Lagerloef Trading Co., Hallaren, Viborg, 310 bls. sulphite.
Lagerloef Trading Co., Hallaren, Kotka, 254 bls. sulphate.
Bulkley, Dunton & Co., Gripsholm, ——, 591 bls. sulphite.
Johanson Wales & Spare, Inc., Gripsholm, Gothenburg, 229 bls. dry soda pulp; 150 bls. wood pulp.
Price & Pierce, Ltd., Gripsholm, Gothenburg, 1250 bls. wood pulp.
O. E. Kiaer, Gripsholm, Gothenburg, 600 bls. wood pulp.
Chemical Bank & Trust Co., Hagen, Hamburg, 255 bls. sulphite, 51 tons.
——, Hagen, Hamburg, 154 bls. wood pulp, 25 tons.

BALTIMORE IMPORTS

WEEK ENDING JANUARY 4, 1930

Congoleum Nairn Co., Explorer, Catania, 251 bls. rags.
——, Explorer, Palermo, 196 bls. rags.
S. Shapiro & Son, Waukegan, Havre, 100 bls. rags.
Katzenstein & Keene, Inc., Waukegan, Havre, 662 bls. rags.
Katzenstein & Keene, Inc., Waukegan, Dunkirk, 435 bls. rags.
S. Shapiro & Son, Waukegan, Dunkirk, 100 bls. rags.
Castle & Overton, Inc., Waukegan, Dunkirk, 186 bls. flax waste.
National City Bank, Anna C. Venice, 278 bls. rags.
Parsons & Whittemore, Inc., Ragnhildsholm, ——, 900 bls. sulphite; 3179 bls. sulphate.
Parsons & Whittemore, Inc., Altmark, ——, 1535 bls. wood pulp.

NORFOLK IMPORTS

WEEK ENDING JANUARY 4, 1930

Lagerloef Trading Co., Hallaren, Viborg, 612 bls. sulphate; 4017 bls. sulphite.
Virginian & Pilot Publishing Co., Hallaren, Kotka, 282 rolls news print.
H. Reeve Angel & Co., Inc., Hallaren, Kotka, 53 rolls news print.
Lagerloef Trading Co., Hallaren, Kotka, 5730 bls. sulphite; 612 bls. sulphate.

PHILADELPHIA IMPORTS

WEEK ENDING JANUARY 4, 1930

J. E. Bernard & Co., Liberty, Havre, 25 cs. printing paper.
W. J. Jones, Liberty, Havre, 1 cs. wall paper.
Castle & Overton, Inc., Liberty, Havre, 147 bls. rags.
Guaranty Trust Co., Liberty, Havre, 64 bls. rags.
True & McClelland, Liberty, Havre, 40 bls. rags.
Robert Blank, Liberty, Havre, 47 bls. rags.
Nat'l. Vulcanized Fibre Co., Liberty, Havre, 117 bls. rags.
V. Galaup, Liberty, Havre, 380 bls. rags.
A. Hurst & Co., Liberty, Havre, 54 bls. rags.
J. A. Steer & Co., Liberty, Havre, 6 bls. rags.
D. I. Murphy & Co., Liberty, Havre, 723 bls. rags.
Katzenstein & Keene, Inc., Liberty, Havre, 237 bls. rags, 43 bls. bagging.
Katzenstein & Keene, Inc., Liberty, Dunkirk, 695 bls. rags.
J. A. Steer & Co., Liberty, Dunkirk, 28 bls. rags.
Castle & Overton, Inc., Liberty, Dunkirk, 34 bls. rags.
Union Waste Co., Liberty, Dunkirk, 15 bls. rags.
V. Galaup, Liberty, Dunkirk, 69 bls. rags.
D. I. Murphy, Liberty, Dunkirk, 120 bls. rags.
Darmstadt, Scott & Courtney, Liberty, Dunkirk, 44 bls. rags.
Silberman Co., Liberty, Dunkirk, 120 bls. rags.
E. J. Keller Co., Inc., Liberty, ——, 89 bls. rags.
V. Galaup, Explorer, Naples, 310 bls. rags.
Equitable Trust Co., Explorer, Odessa, 132 bls. rags.
Lagerloef Trading Co., Hallaren, Helsingfors, 318 bls. sulphite.
Lagerloef Trading Co., Hallaren, Viborg, 8486 bls. sulphite.
Lagerloef Trading Co., Hallaren, Kotka, 332 bls. wood pulp boards; 1549 bls. sulphite.
Intl. Acceptance Bank, Hagen, Hamburg, 62 bls. rags.
Brown Bros. & Co., Hagen, Hamburg, 22 bls. rags.
Castle & Overton, Inc., Hagen, Hamburg, 335 bls. rags.
J. A. Steer & Co., Hagen, Hamburg, 51 bls. rags.
J. Lang Paper Co., Hagen, Hamburg, 105 bls. rags.
F. Stern, Hagen, Hamburg, 192 bls. rags.
Castle & Overton, Inc., Hagen, Hamburg, 670 bls. wood pulp, 100 tons.
W. Steck & Co., Hagen, Hamburg, 58 bls. old rope.
Bulkley, Dunton & Co., Hagen, ——, 1000 bls. wood pulp, 203 tons.
Phila. National Bank, Hinnoy, Barcelona, 337 bls. rags.
Bank of New York, Hinnoy, Barcelona, 75 bls. rags.
Tradesmans Natl. Bank, Hinnoy, Barcelona, 35 bls. rags.
Intl. Germanic Trust Co., Hinnoy, Barcelona, 67 bls. rags.
E. J. Keller Co., Inc., Holger, ——, 33 bls. rags.
E. J. Keller, Co., Inc., Ambridge, ——, 307 bls. rags.
E. J. Keller, Co., Inc., Lorain, ——, 11 bls. rags.
Parsons & Whittemore, Inc., Friesland, ——, 1200 bls. sulphite pulp.

High Pressure Steam in the Paper Industry

The Combustion Engineering Company has prepared reprints of a paper entitled "High Pressure Steam in the Paper Industry" which was presented by J. B. Crane of the Combustion Engineering Corporation before a joint meeting of the News Print Service Bureau and the Northwestern Division of the American Pulp and Paper Mill Superintendents Association at Marinette, Wis.

While the subject is considered primarily from the standpoint of the paper industry, the principles discussed apply equally to other industries which use steam for power and process work.

This topic is particularly timely because of the great interest that is being evidenced in the economic possibilities of high pressure steam especially in connection with industrial plants.

Additional copies of the reprint are available and will be sent upon request to those interested.

William J. Murphy Passes Away

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., January 7, 1930.—An old timer passed away Thursday last in William J. Murphy, who had been foreman at the Albion and George R. Dickinson paper mills for a period covering 52 years. Two of his children are priests: the Rev. John A. Murphy, of Worcester, and the Rev. Jeremiah C. Murphy, of Indian Orchard; and another is principal of the Joseph Metcalf School.

Strathmore Invites Cooperation

WORONOCO, Mass., January 7, 1930.—Cards have been distributed among the workers of the Strathmore Paper Company on which suggestions are to be welcomed for improvements of various kinds such as safety, ordinary maintenance, improved equipment and the like. Cards when filled out are to be dropped in a suggestion box provided for the purpose. Money prizes will be awarded successful suggestion submitters.

Pulp Exports from Helsingfors Increase

WASHINGTON, D. C., January 8, 1930.—A cablegram from Commercial Attache Osborne at Helsingfors states that pulp and pulpwood exports increased during 1929 with prospects for a larger output during 1930, but with no improvement in prices. No changes are noticeable in the paper market, sales progressing at about the same level as last year.

Acquires City Packing Co.

[FROM OUR REGULAR CORRESPONDENT]

DAYTON, Ohio, January 7, 1930.—Harry B. Slavin of the Cleaning Mutual Corporation has completed negotiations with the G. H. Schartzer Company for the old Gem City Packing Company on the Baltimore & Ohio tracks near Springfield street at a consideration of $21,000 and will use the structure in reclaiming rags for use in paper manufacture.

PARIS BLACK IN FIBRE CONTAINERS

Still going strong . . have you ordered?

Buyers liked the idea of Paris Black in Fibre Containers right from the start. There has been no let down in the demand—in fact, it is increasing.

So this is a reminder to try it, in case you aren't already a satisfied user. By packing in fibre containers, the full strength and fine quality of Heller & Merz Paris Black reaches your plant unimpaired.

Prompt deliveries made from stocks in
NEW YORK
BOSTON
PHILADELPHIA
CHICAGO

Ask us to quote.

The HELLER & MERZ COMPANY
505 Hudson St., New York

Boston 287 Atlantic Ave. | Chicago 146 W. Kinzie St. | Springfield, Mass. 40 Albert St. | Philadelphia 114 Market St.
Factory—NEWARK, N. J.

St. Regis Paper Company

Daily Capacity, 525 Tons

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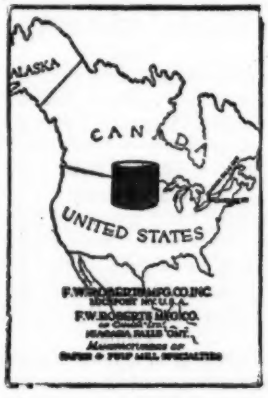
Kalamazoo Representative
ALEX W. MACVIE
1414 PORTAGE ST., KALAMAZOO, MICH.

BURRS



BURRS

New York Market Review

Office of the PAPER TRADE JOURNAL,
Wednesday, January 8, 1930.

While trading in the local paper market was only moderately active during the past week, increased activity is anticipated in the near future, now that the inventory period is ending. Demand for the various standard grades of paper has been seasonal during the past two weeks, but prices are holding to previously quoted levels, in most instances.

The news print situation is practically unchanged. No increase in quotations is expected to be made for the first six months of the year. However, most of the manufacturers hope for a satisfactory solution of the price problem at the end of this period. Consumption of news print locally is very heavy at present, due mainly to the volume of advertising required for exhibitors at the Automobile Show.

Most of the business transacted in the paper board market was along routine lines. The price situation remains unsatisfactory. The fine paper market is in a sound position, with prices generally holding to schedule. Tissues are moving in fair volume. The coarse paper market is rather quiet, although wrapping paper is in steady request.

Mechanical Pulp

Steadiness prevails in the ground wood market. Contract shipments are going forward in normal volume for the season. With production curtailed at home and abroad, offerings continue rather scarce. Prices are being maintained at the levels previously reported and there is little talk of concessions around.

Chemical Pulp

Conditions in the local chemical pulp market are seasonal. Imported unbleached sulphite and easy bleaching sulphite continue to exhibit strength. Demand for other grades of chemical pulp is rather light at present. Prices are generally holding to schedule and reports of shading are infrequent.

Old Rope and Bagging

Demand for old rope has fallen off slightly. Domestic and imported manila rope is moving in fair volume. Foreign manila rope is now offered at from $4.25 to $4.50 and domestic manila rope at from $4.75 to $5.00. Mixed rope is fairly steady. No radical changes were recorded in the bagging market.

Rags

The domestic rag market was very quiet during the past week. Cotton cuttings were only in moderate demand. Roofing rags are attracting a fair amount of interest. Prices are somewhat weaker. New white No. 1 shirt cuttings are now quoted at from $9.50 to $10.50 and No. 2 at from $7.50 to $8.00.

Waste Paper

Mill demand for the lower grades of paper stock is mostly routine. Prices are rather weak. Strictly folded news is now offered at from 45 cents to 55 cents. Other grades are practically unchanged. The better grades of waste paper contine steady. Book stock is in excellent request. Prices are holding to schedule.

Twine

The local twine market is in a fairly satisfactory position. Although most of the business booked of late has consisted of small orders for immediate requirements, more activity is anticipated in the near future. Prices rule fairly steady, although competition for desirable orders is rather keen.

Bids for Government Paper

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., January 8, 1930.—The Government Printing Office has received the following bids for 34,600 pounds of 38x48; 173 M. F. book paper; Allied Paper Mills, at 10 cents per pound; Whiting Paper Company, 13 cents; R. P. Andrews Paper Company, 10 cents; Whitaker Paper Company, 9.95 cents; Old Dominion Paper Company, 9.89 cents; Atlantic Paper Company, 8.79 cents.

The following bids were also received for 23,300 pounds of various sizes white bond paper, 50 per cent rag; Atlantic Paper Company, at 12.47 cents per pound; Whiting Paper Company, 13 cents; R. P. Andrews Paper Company, 14.25 cents; Barton Duer & Koch Paper Company 12.95 cents; Mathers-Lamm Paper Company, 13 cents; Old Dominion Paper Company, 12.98 cents; and Dobler & Mudge, 13 cents.

For 5,000 sheets of 22x28, railroad board; Virginia Paper Company, at $33.47 per M sheets; Barton, Duer & Koch Paper Company, $32.50; R. P. Andrews Paper Company, $39.00; Mathers-Lamm Paper Company, $32.50 and $29.25; Holyoke Card & Paper Company, $32.50; T. A. Cantwell & Company, $35.00 and $29.85; Stanford Paper Company, $39.00; Carter, Rice & Company, Corp., $34.50; Walker Goulard Plehn Company, Inc., $35.50; Old Dominion Paper Company, $33.74; Whitaker Paper Company, $34.01 and $35.00; and Dobler & Mudge, $40.00.

The Government Printing Office has received the following bids for 37,600 pounds of various sizes white sulphite bond paper; Atlantic Paper Company, at 6.54 cents per pound; Cauthorne Paper Company, 6.5 cents; Whitaker Paper Company, 7.07 cents; R. P. Andrews Paper Company, 6.44 cents; Barton, Durer & Koch Paper Company, 6.48 cents; Aetna Paper Company, 7.25 cents; Old Diminion Paper Company, 6.6 cents; Walker Goulard Plehn Company, 6.69 cents; Dobler & Mudge Company, 7 cents; Import Paper Company, 6.75 cents; Reese & Reese, Inc., 6.4 cents.

The following bids have also been received for 4,000 pounds of gummed kraft paper in 24 rolls; Atlantic Paper Company, at 11.7 cents per pound; R. P. Andrews Paper Company, 9.1 cents; Barton, Duer & Koch Paper Company, 17 cents; T. A. Cantwell & Company, 9.3 cents; Whitaker Paper Company, 11.03 cents; Mathers-Lamm Paper Company, 8.9 cents; Walker Goulard Plehn Company, 9.5 cents; Reese & Reese, Inc., 9.83 cents; Dobler & Mudge, 10 cents; Cauthorne Paper Company, 8.86 cents; and Old Diminion Paper Company, 8.64 cents.

F. L. Carlisle to be Honored

[FROM OUR REGULAR CORRESPONDENT]

CANTON, N. Y., January 4, 1930.—Floyd L. Carlisle, head of the St. Regis Paper Company and president of F. L. Carlisle & Co., will be the guest of honor at the annual dinner of the St. Lawrence County Society to be held at the Hotel Commodore in New York City on January 16. Mr. Carlisle recently donated a fund of $100,000 to be spent in annual disbursement of $20,000 through the medium of St. Lawrence University for the purpose of promoting forestry in this section. Other prominent men are expected to attend the banquet.

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CANTON, MASS.
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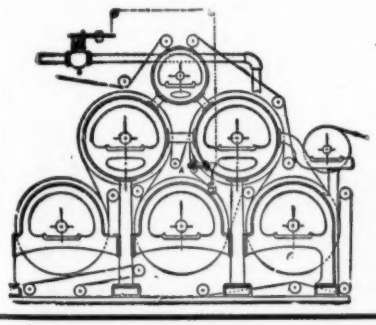

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will do everything we claim for it and more. The test costs you nothing until you are satisfied. Many mills tried one and now have every machine equipped. Write for list of users and other information.

W. F. PICKLES **Buckland, Conn.**

Miscellaneous Markets

Office of the PAPER TRADE JOURNAL,
Wednesday, January 8, 1930

BLANC FIXE.—Trading in the blanc fixe market was moderately active during the past week. Contract shipments were well up to average. The pulp is still quoted at from $42.50 to $45.00 per ton, in bulk, while the powder is selling at from 3¼ cents to 4½ cents a pound, in barrels, at works.

BLEACHING POWDER.—The bleaching powder market is practically unchanged. Supplies are moving into consumption in fair volume for the time of year. Prices are generally holding to previously quoted levels. Bleaching powder is selling at from $2.00 to $2.35 per 100 pounds, at works.

CASEIN.—Steadiness prevails in the casein market. Domestic casein is still quoted at from 14½ cents to 15½ cents per pound. Argentine standard ground is selling at from 14½ cents to 15 cents, and finely ground at from 15 cents to 15½ cents per pound, all in bags, car lot quantities.

CAUSTIC SODA.—Contract shipments of caustic soda were light during the week, due to the wane of the holiday season. Prices remain unaltered. Solid caustic soda is quoted at from $2.90 to $2.95, and the flake and the ground at from $3.30 to $3.35 per 100 pounds, in large drums, at works.

CHINA CLAY.—The china clay market continues steady. Contract shipments are going forward in normal volume for the season. Prices are unchanged. Imported china clay is quoted at from $15 to $25 per ton, ship side, while domestic paper making clay is selling at $8 to $13, at mine.

CHLORINE.—Conditions in the chlorine market are fairly satisfactory. The contract movement is heavy. Chlorine is quoted at $2.75 per 100 pounds, in tanks, or multi-unit cars, at works, for lots of 250 pounds, or over. For less than that quantity, the quotation is $2.85 per 100 pounds, at works.

ROSIN.——No radical changes were reported in the rosin market. The grades of gum rosin used in the paper mills are now quoted at from $8.20 to $8.30 per 280 pounds, in barrels, on dock. Wood rosin is still selling at from $6.50 to $7.65 per 280 pounds, in barrels, at southern shipping points.

SALT CAKE.—The salt cake market is exceptionally firm at present. There has been a very heavy spot demand of late but offerings are decidedly scarce at present. Salt cake is quoted at from $22 to $25 per ton, while chrome salt cake is selling at from $20 to $21 per ton, in bulk, at works.

SODA ASH.—Although demand for soda ash has quieted down, the market is exhibiting a strong undertone. Supplies are moving into consumption at a normal pace. Prices are holding to previously quoted levels. Contract quotations, in car lots, at works, are: in bags, $1.32½; in barrels, $1.55.

STARCH.—The starch market is in a sound position. Demand from the paper mills is fairly satisfactory and offerings are sufficient to take care of current needs. Prices remain unchanged. Special paper making starch is quoted at $3.82 per 100 pounds, in bags, and at $4.09 per 100 pounds, in barrels.

SULPHATE OF ALUMINA.—Contract renewals of sulphate of alumina are being booked in good volume for future delivery. Prices are holding to schedule, without difficulty. Commercial grades are quoted at $1.40 to $1.55, and iron free at $1.90 to $2.05 per 100 pounds, in barrels, at works.

SULPHUR.—The sulphur market was rather quiet during the past week. Prices are steady. Sulphur is quoted at $18 per ton, at mine, for 1,000 tons, or over, on yearly contracts, and at $20 per ton for any smaller quantity over the same period. On spot and near by car loads, the quotation is $21.

TALC.—Seasonal conditions prevail in the local talc market. Contract shipments are proceeding in a routine manner. Prices remain unaltered. Domestic talc is quoted at from $16 to $18 per ton, in bulk, at eastern mines, while imported talc is selling at from $18 to $20 per ton, in bags, ship side.

Market Quotations

Paper

(F. o. b. Mill)

Ledgers	11.00	@38.00
Bonds	9.00	@53.25
Writings—		
Extra Superfine	14.00	@32.00
Superfine	14.00	@32.00
Tub sized	10.00	@15.00
Engine sized	8.00	@11.00
Book, Cased—		
S. & S. C.	6.00 @	7.50
M. F.	5.75 @	7.00
Coated and Enamel	7.50	@12.00
Lithograph	7.50	@12.00
Tissues—Per Ream—		
White No. 1	.75 @	1.00
Anti-Tarnish	1.35 @	1.90
Colored	1.00 @	2.00
White No. 2	.75 @	.80
Kraft	1.00 @	1.10
Manila	.75 @	.80
Kraft—		
No. 1 Domestic	6.25 @	6.50
No. 2 Domestic	5.00 @	5.50
Southern	4.45 @	4.70
Imported	6.50 @	7.00
Manila—		
No. 1 Jute	9.00 @	9.25
No. 2 Jute	7.75 @	8.50
No. 1 Wood	4.75 @	5.25
No. 2 Wood	4.00 @	4.50
Butchers	3.75 @	4.25
Fibre Papers—		
No. 1 Fibre	5.00 @	5.50
No. 2 Fibre	4.75 @	5.25
Common Bogus	2.75 @	3.00
Screenings	3.00 @	3.25
Card Middles	4.00 @	5.00
Glassine—		
Bleached, basis 25 lbs.	13.00	@16.00
Bleached, basis 20 lbs.	15.00	@16.00

(Delivered New York)

News, per ton—		
Rolls, contract	62.00 @	—
Rolls, spot	62.00 @	—
Sheets	67.00 @	—
Side Runs	47.00	@52.00
Boards—per ton—		
News	37.50	@40.00
Straw	52.50	@55.00
Chip	35.00	@37.50
Binders' Boards	65.00	@70.00
Wood Pulp	80.00	@85.00
65 Test Jute Liner	45.00	@47.50
85 Test Jute Liner	50.00	@55.00
Sgl. Mla. Ll. Chip	47.50	@50.00

Mechanical Pulp

(On Dock)

No. 1 Imported—		
Moist	30.00	@32.00
Dry	32.00	@34.00

(F. o. b. Mill)

No. 1 Domestic	26.00	@30.00
Screenings	15.00	@20.00

Chemical Pulp

(On Dock, Atlantic Ports)

Sulphite (Imported)—		
Bleached	3.40 @	4.25
Easy Bleaching	2.90 @	3.15
No. 1 strong unbleached	2.75 @	3.00
Mitscherlich unbleached	2.80 @	3.25
No. 2 strong unbleached	2.40 @	2.60
No. 1 Kraft	2.35 @	2.50
No. 2 Kraft	2.30 @	2.40
Sulphate—		
Bleached	3.40 @	3.85

(F. o. b. Pulp Mill)

Sulphite (Domestic)—		
Bleached	3.20 @	4.75
Easy Bleaching Sulphite	2.65 @	3.00
News Sulphite	2.50 @	2.70
Mitscherlich	3.00 @	3.25
Kraft (Domestic)	2.10 @	3.30
Soda Bleached	3.10 @	3.25
Sulphate Screenings—		
Coarse	.75 @	.95
Refined	1.65 @	1.85

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—		
New White, No. 1	9.50	@10.50
New White, No. 2	7.50 @	8.00
Silesias No. 1	7.50 @	8.00
New Unbleached	10.50	@11.00
New Blue Prints	5.25 @	5.50
New Soft Blacks	5.25 @	5.75
Blue Overall	7.25 @	7.75
Washables	4.75 @	5.25
Fancy	5.50 @	6.00
Mixed Khaki Cuttings	4.75 @	5.25
Pink Corset Cuttings	8.00 @	8.50
O. D. Khaki Cuttings	5.15 @	5.75
Men's Corduroy	3.75 @	4.25
New Mixed Blacks	3.50 @	3.75

Old Rags

White, No. 1—		
Repacked	5.50 @	6.00
Miscellaneous	4.50 @	5.00
White, No. 2—		
Repacked	3.00 @	3.50
Miscellaneous	2.50 @	2.75
St. Soiled, White	2.00 @	2.15
Thirds and Blues—		
Repacked	2.25 @	2.50
Miscellaneous	1.75 @	2.00
Black Stockings	3.25 @	3.75
Roofing Rags—		
Cloth Strippings	1.70 @	1.80
No. 1	1.70 @	1.80
No. 2	1.55 @	1.65
No. 3	1.30 @	1.40
No. 4	1.25 @	1.35
No. 5A	.90 @	1.05

Foreign Rags

New Rags

New Dark Cuttings	2.50 @	3.00
New Mixed Cuttings	2.75 @	3.25
New Light Silesias	7.00 @	7.50
Light Flannelettes	7.50 @	8.00
Unbleached Cuttings	10.00	@11.00
New White Cuttings	10.00	@10.50
New Light Oxfords	7.00 @	7.50
New Light Prints	5.50 @	6.50

Old Rags

No. 1 White Linens	7.25 @	8.00
No. 2 White Linens	5.75 @	6.75
No. 3 White Linens	4.75 @	5.25
No. 4 White Linens	3.00 @	3.50
No. 1 White Cotton	5.50 @	6.50
No. 2 White Cotton	4.50 @	5.50
No. 3 White Cotton	3.00 @	4.00
No. 4 White Cotton	2.00 @	2.10
Extra Light Prints	2.75 @	3.25
Ord. Light Prints	2.25 @	2.50
Med. Light Prints	1.95 @	2.10
Dutch Blue Cottons	2.20 @	2.35
French Blue Linens	2.75 @	2.85
German Blue Linens	2.35 @	2.55
German Blue Cottons	2.10 @	2.20
Checks and Blues	1.85 @	2.00
Lindsay Garments	1.85 @	1.95
Dark Cottons	1.55 @	1.60
Old Shopperies	1.50 @	1.55
New Shopperies	1.50 @	1.55
French Blues	2.10 @	2.25

Old Rope and Bagging

(Prices to Mill f. o. b. N. Y.)

Gunny No. 1—		
Foreign	1.50 @	1.60
Domestic	1.60 @	1.70
Wool Tares, light	1.60 @	1.65
Wool Tares, Heavy	1.60 @	1.70
Bright Bagging	1.60 @	1.70
Small Mixed Rope	1.25 @	1.40
Manila Rope—		
Foreign	4.25 @	4.50
Domestic	4.75 @	5.00
New Burlap Cut	2.75 @	3.00
Hessian Jute Threads—		
Foreign	3.50 @	4.00
Domestic	3.25 @	3.50

Old Waste Papers

(F. o. b. New York)

Shavings—		
Hard, white, No. 1	3.00 @	3.25
Hard, white, No. 2	2.40 @	2.55
Soft, White, No. 1	2.40 @	2.55
White envelope cuttings	2.90 @	3.10
Flat Stock—		
Stitchless	1.45 @	1.55
Overissue Mag.	1.45 @	1.55
Solid Flat Book	1.40 @	1.50
Crumpled No. 1	1.00 @	1.10
Solid Book Ledger	2.00 @	2.10
Ledger Stock	1.40 @	1.50
New B. B. Chips	.45 @	.55
Manilas—		
New Env. Cut	2.40 @	2.60
New Cuttings	1.50 @	1.75
Extra No. 1 old	1.25 @	1.35
Print	.60 @	.65
Container	.40 @	.50
Bogus Wrapper	.60 @	.65
Old Kraft Machine Compressed bales	1.65 @	1.75
News—		
No. 1 White News	1.65 @	1.75
Strictly Overissue	.60 @	.65
Strictly Folded	.45 @	.55
No. 1 Mixed Paper	.25 @	.30
Common Paper	.15 @	.20

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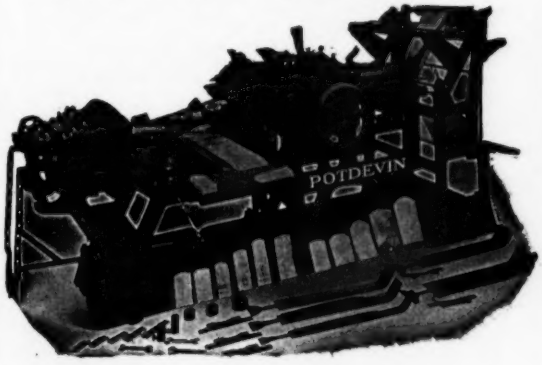

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SINCE 1898

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EMPIRE, OHIO
OPEKISKA, W. VA.

Twines
(F. o. b. Mill)

Cotton—			
No. 1	.39	@	.40
No. 2	.37	@	.38
No. 3	.36	@	.37
B. C., 18 basis	.38	@	.40
A. B. Italian, 18 basis	.48	@	.53
Finished Jute—			
Dark 18 basis	.24	@	.25
Light 18 basis	.27	@	.28
Jute Wrapping, 3-6 Ply—			
No. 1	.19	@	.21
No. 2	.18	@	.20
Tube Rope—			
4-ply and larger	.16	@	.17
Fine Tube Yarn—			
5-ply and larger	.21	@	.25
4-ply	.25	@	.29
3-ply	.28	@	.32
Unfinished India—			
Basis	.13	@	.14
Paper Makers Twine Balls	.11	@	.12
Box Twine, 2-3 ply	.15	@	.17
Jute Rope	.17	@	.19
Amer. Hemp, 6	.29	@	.31
Sisal Hay Rope—			
No. 1 Basis	.16	@	.18
No. 2 Basis	.14	@	.16
Sisal Lath Yarn—			
No. 1	.14	@	.16
No. 2	.12	@	.14
Manila Rope	.22	@	.24

CHICAGO

Paper
(F. o. b. Mill)

Rag Bond	.30	@	.53¼
Water Marked Sulphite Bond	.09	@	.12
Sulphite Bond	.06¾	@	.11
Superfine writing	.18	@	.24
No. 1 fine writing	.14	@	.18
No. 2 fine writing	.12	@	.14
No. 3 fine writing	.08½	@	.12
No. 1 M. F. Book	.06½	@	.07¼
No. 2 M. F. Book	.05¼	@	.06¼
No. 1 S.&S.C. Book	.06¾	@	.07¾
No. 2 S.&S.C. Book	.05¾	@	.06½
Coated Book	.07½	@	.12
Coated Label	.07½	@	.10
No. 1 Manila	.04¼	@	.05¾
No. 1 Fibre	.04¾	@	.05¼
No. 2 Manila	.04¼	@	.04¾
Butcher's Manila	.04	@	.04½
No. 1 Kraft	.06¼	@	.06½
Southern Kraft	4.25	@	4.50
No. 2 Kraft	.04	@	.04¼
Wood Tag Boards	.04¼	@	.06¼
Sulphite Screenings	.03	@	.03¼
Manila Tissue—			
24x36 Sheet	.07	@	.07¼
White Tissue—			
20x30 Sheet	.07¼	@	.07½
(Delivered Central Territory)			
News, per ton—			
Rolls, contract	62.00	@	—
Sheets	67.00	@	—
Boards, per ton—			
Plain Chip	37.50	@	42.50
Solid News	47.50	@	—
Solid News	40.00	@	45.00
Manila Lined Chip	50.00	@	55.00
Container Lined—			
85 Test	65.00	@	70.00
100 Test	70.00	@	—

Old Papers
(F. o. b. Chicago)

Shavings—			
No. 1 Hard White	2.20	@	2.25
White Env. Cuttings	2.40	@	2.50
No. 1 Soft Shavings	2.00	@	2.10
No. 1 Mixed	.60	@	.70
No. 2 Mixed	.50	@	.60
Ledger & Writings	1.25	@	1.35
Solid Books	1.05	@	1.10
Blanks	1.40	@	1.50
Krafts	1.60	@	1.75
New Kraft Cuts	2.15	@	2.25
Manila Envelope Cuttings	1.75	@	1.80
Ex. No. 1 Manila	1.30	@	1.45
Print Manila	.70	@	.75
Folded News (overissue)	.65	@	.70
Old Newspapers—			
No. 1	.65	@	.70
No. 2	.55	@	.65
Mixed Papers—			
No. 1	.50	@	.60
Roofing Stocks—			
(F. o. b. Chicago, net cash)			
No. 1	30.00	@	—
No. 2	28.00	@	—

PHILADELPHIA

Paper
(F. o. b. Mill)

Bonds	.06	@	.40
Ledgers	.09	@	.40
Writings—			
Superfine	.12½	@	.18
Extra fine	.18	@	.22
Fine	.17	@	.26
Fine, No. 2	.15	@	.25
Fine, No. 3	.10	@	.20
Book, M. F.	.05½	@	.07
Book, S. S. & C.	.06	@	.07½
Book, Coated	.09½	@	.16
Coated Lithograph	.07	@	.11
Label	.07	@	.11
No. 1 Jute Manila	.08	@	.09
Manila Sul., No. 1	.04	@	.05½
Manila No. 2	.03	@	.04
No. 2 Kraft	.06	@	.06½
No. 1 Kraft	.06½	@	.07
Common Bogus	.03½	@	.04
(Delivered Philadelphia)			
News Print Rolls	62.00	@	—
Straw Board	52.50	@	70.00
News Board	37.50	@	40.00
Chip Board	35.00	@	47.50
Wood Pulp Board	85.00	@	95.00
Binder Boards—			
No. 1, per ton	75.00		
No. 2, per ton	70.00		
Carload lots	68.00	@	70.00
Tarred Felts—			
Regular	55.50	@	57.00
Slaters (per roll)	.84	@	.94
Best Tarred, 1-ply (per roll)	1.95	@	2.10
Best Tarred, 2-ply (per roll)	1.50	@	1.60
Best Tarred, 3-ply	2.00	@	2.25

Domestic Rags (New)
(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White, No. 1	.10¾	@	.11
New White, No. 2	.07	@	.07½
Light Silesias	.07	@	.07½
Silesias, No. 1	.07	@	.09
Black Silesia, soft	.05	@	.05½
New Unbleached	.10½	@	.11
Washable, No. 1	.04½	@	.05
Blue Overall	.07½	@	.08
Cottons—According to grades—			
Washable, No. 2	.03	@	—
New Blue	.03	@	.03½
Fancy	.05½	@	.06
New Black Soft	.05	@	.05¾
New Light Seconds	.02½	@	.03
New Dark Seconds	1.85	@	2.00
Khaki Cuttings—			
No. 1 O. D.	.05½	@	.05¾
No. 2 Mixed	.04½	@	.04¾
Corduroy	.03	@	.03½
New Canvas	.08½	@	.09
New Black Mixed	.03¾	@	.04½

Bagging
(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	1.50	@	1.60
Domestic	1.75	@	—
Manila Rope	3.50	@	4.00
Sisal Rope	1.50	@	—
Mixed Rope	1.10	@	1.25
Scrap Burlaps—			
No. 1	1.50	@	1.60
No. 2	1.10	@	1.20
Wool Tares, heavy	3.00	@	—
Mixed Strings	1.15	@	1.25
No. 1, New Light Burlap	2.50	@	2.75
New Burlap Cuttings	2.00	@	2.25

Old Papers
(F. o. b. Phila.)

Shavings—			
No. 1 Hard White	3.20	@	3.25
No. 2 Hard White	2.75	@	3.00
No. 1 Soft White	2.80	@	2.90
No. 2 Soft White	1.80	@	1.90
No. 1 Mixed	1.50	@	1.60
No. 2 Mixed	.90	@	1.00
Solid Ledger Stock	1.85	@	1.90
Writing Paper	1.60	@	1.65
No. 1 Books, heavy	1.40	@	1.50
No. 2 Books, light	1.05	@	1.15
No. 1 New Manila	2.40	@	2.50
No. 1 Old Manila	1.50	@	1.60
Print Manila	.95	@	1.00
Container Manila	.85	@	.90
Old Kraft	2.25	@	2.50
Common paper	.50	@	.55
No. 1 Mixed Paper	.60	@	.65
Straw Board, Chip	.60	@	.65
Binders Board, Chip	.60	@	.65
Overissue News	.80	@	.85
Old Newspaper	.50	@	.55

Domestic Rags (Old)

White, No. 1—			
Repacked	4.25	@	4.50
Miscellaneous	3.50	@	3.75
White, No. 2	2.00	@	2.25
Thirds and Blues—			
Repacked	2.00	@	2.25
Miscellaneous	1.60	@	1.80
Black Stockings (Export)	3.90	@	4.25
Roofing Stock—			
Foreign No. 1	1.65	@	1.75
Repacked	.01¾	@	.01
No. 2	1.30	@	1.35
No. 3 (Roofing)	1.15	@	1.25
No. 4	1.00	@	1.15
No. 5A	.75	@	.85
B	.65	@	.75
C	.65	@	.75

BOSTON

Paper
(F. o. b. Mill)

Ledgers—			
Sulphite	.07½	@	.12½
Rag content	.15	@	.30
All rag	.38	@	.52½
Bonds—			
Sulphite	.06½	@	.11½
Rag content	.15	@	.30
All rag	.36½	@	.65
Writings	.06½	@	.20
Superfines	.11	@	.31
Book, Super	.06	@	.09
Book, M. F.	.05½	@	.08½
Book, Coated	.08½	@	.18
Coated Litho	.09	@	.12
Label	.09½	@	.15
Jute Manila No. 1	.11	@	.13
Manila, Sul. No. 1	.04¾	@	.06½
Manila, Sul. No. 2	.03¾	@	.04½
No. 1 Kraft	.06¼	@	.06½
No. 2 Kraft	.04½	@	.05½
Common Bogus	.02	@	.02¾
Delivered New England points			
News Print Rolls	61.50	@	—
Straw Boards, rolls	.009		52.50
Straw Board in Sheets, basis 35s to 70s	54.50	@	55.00
Filled News Board	37.50	@	40.00
Chip Board	35.00	@	37.50
Single Manila Lined Chip	50.00	@	—
Single White, Patent Coated Newsboard Bender	65.00	@	80.00
Wood Pulp Board	80.00	@	85.00
Binder Boards	70.00	@	75.00
(F. o. b. Mill)			
Tarred Felts—			
Regular, carload lots	65.00	@	—

Old Papers
(F. o. b. Boston)

Shavings—			
No. 1 Hard White	3.25	@	3.75
No. 2 Hard White	2.60	@	2.90
No. 1 Soft White	2.40	@	2.50
No. 1 Mixed	1.10	@	1.15
No. 2 Mixed	.85	@	.90
Solid Ledger Stock	2.35	@	2.45
No. 1 Books, Heavy	1.50	@	1.55
No. 1 Books, Light	—	@	1.15
Manila Env. Cuttings	2.00	@	2.25
No. 1 Old Manila	.90	@	1.00
White Blank News	1.60	@	1.70
Old Kraft	.165	@	1.85
Print Manila	.80	@	.90
No. 1 Mixed Paper	.30	@	.35
Overissue News	.50	@	.65
Old Newspapers	.45	@	.50
Box Board, Chip	.45	@	.50

Bagging
(F. o. b. Boston)

Gunny No. 1—			
Foreign	1.40	@	1.50
Manila Rope—			
Foreign	4.25	@	4.40
Domestic	—	@	4.50
Transmission Rope	—	@	2.75
Mixed Strings	.90	@	1.00
Jute Wool Strings	1.00	@	1.05
Jute Carpet Threads	1.05	@	1.15
Scrap Burlaps	—	@	1.35
Scrap Sisal	1.80	@	2.00
Scrap Sisal for shredding	2.25	@	2.50
Wool Tares, heavy	1.60	@	—
New Burlap Cutting	1.90	@	2.00
Australian Wool Pouches	3.00	@	3.12½

Domestic Rags (New)
(F. o. b. Boston)

Shirt Cuttings—			
New White No. 1	.09½	@	.10
Silesias, No. 1	.06	@	.06¼
New Unbleached	.10	@	.10½
Fancy	.04	@	.04½
Washable	.04	@	.04½
Cottons—According to grades			
Blue Overalls	.06¼	@	.06¾
New Black, soft	.04	@	.04½
Khaki Cuttings	.04	@	.04¾
O. D. Khaki	.05	@	—
Corduroy	.03	@	.03¾
New Canvas	.08	@	.08½

Domestic Rags (Old)
(F. o. b. Boston)

Canvas	.04½	@	—
White No. 1—			
Repacked	4.75	@	5.25
Miscellaneous	5.00	@	—
White No. 2—			
Repacked	.04½	@	.05
Miscellaneous	.03½	@	.04
Twos and Blues	2.75	@	3.00
Thirds and Blues—			
Repacked	2.25	@	2.50
Miscellaneous	1.75	@	1.90
Black Stockings	—	@	4.00
Roofing Stock—			
No. 1	1.65	@	1.75
No. 2	1.45	@	1.55
No. 3	1.05	@	1.10
No. 4	1.10	@	1.15

Foreign Rags
(F. o. b. Boston)

Dark Cottons	1.50	@	1.55
New No. 1 Shirt Cuttings	9.00	@	9.50
Dutch Blues	2.00	@	2.12½
Lace Curtains	4.75	@	5.00
New Checks & Blues	4.25	@	4.60
Old Fustians	1.90	@	2.00
Old Linsey Garments	1.80	@	1.90

TORONTO

Paper
(F. o. b. Mill)

Bond—			
No. 1 Sulphite	.12½	@	—
No. 2 Sulphite	.10¾	@	—
No. 1 Colored	.13½	@	—
No. 2 Colored	.11¼	@	—
Ledgers (sulphite)	—	@	—
Ledgers, No. 1	.36	@	—
Ledgers, No. 2	.27	@	—
Writing	.09½	@	.10
Book—			
No. 1 M. F. (carloads)	7.50	@	—
No. 2 M. F. (carloads)	7.25	@	—
No. 3 M. F. (carloads)	7.00	@	—
No. 1 S. C. (carloads)	8.00	@	—
No. 2 S. C. (carloads)	7.75	@	—
No. 3 S. C. (carloads)	7.50	@	—
No. 1 Coated and Litho	13.25	@	—
No. 2 Coated and Litho	12.25	@	—
No. 3 Coated and Litho	11.50	@	—
Coated tinted	14.50	@	—
Wrapping—			
Rag Brown	4.95	@	—
White Wrap	5.25	@	—
"B" Manila	5.80	@	—
No. 1 Manila	6.65	@	—
Fiber	6.65	@	—
Kraft, M. F.	7.00	@	—
M. G.	7.00		—

(Delivered Toronto)

News, per ton—			
Rolls (contract)	61.50	@	62.00
Sheets	67.00	@	—

Pulp
(F. o. b. Mill)

Ground Wood	31.00	@	32.00
Sulphite easy bleaching	60.00	@	—
Sulphite news grade	60.00	@	—
Sulphite, bleached	77.00	@	78.00
Sulphate	60.00	@	—

Old Waste Paper
(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut	3.00	@	—
Soft White Book Shavings	2.85	@	—
White Blk. News	1.60	@	—
Book and Ledger—			
Flat Magazine and Book Stock (old)	1.40	@	—
Light and Crumpled Book Stock	1.25	@	—
Ledgers and Writings	1.50	@	—
Solid Ledgers	1.50	@	—
Manilas—			
New Manila Cut	1.50	@	—
Printed Manilas	1.00	@	—
Kraft	2.25	@	—
News and Scrap—			
Strictly Overissue	.85	@	—
Strictly Folded	.85	@	—
No. 1 Mixed Paper	.65	@	—

Domestic Rags
(Price to mills, f. o. b. Toronto)

No. 1 White Shirt Cuttings	.09¼	@	.10
Fancy Shirt Cuttings	.06	@	.06¼

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TABLE OF CONTENTS

Copyright, 1930, by the Lockwood Trade Journal Co., Inc.

Dalhousie Mill to Operate Next Month 21
Wisconsin's Rest Law Satisfactory 22
Combined Locks to Build New Units 22
Gift for Lawrence College 22
Paper Demand is Spotty in Philadelphia 24
Hinde & Dauch Co. Staff Changes 24
Changes at West Carrollton 26
Warren Parchment Fiber Bankruptcy Petition 26
Activities of the Ontario Paper Industry 28
Fort William Shut Down Temporarily 28
John J. White Honored by Holyoke 30
Changes Name to Missisquoi Corp. 30
Composition Plug for Paper Rolls 30
Murals for Crown Zellerbach Building 32
Paper Board Men to Meet January 21-23 32
New York Trade Jottings 34
Imports of Paper and Paper Stock 36
Exports of Paper and Paper Stock 36
Brotherhood Water Trust Case to be Heard 38
Construction News 40
Brotherhood Executives Confer 42
Chicago Paper Trade Happenings 42
Editorial **44**
International Gives College Forest Land 45
Shop Maintenance School at Appleton 45
American Foresters to Meet in Minneapolis 45

Technical Section
Straw Pulp by the Rinman Method 47
Water Wheel Installation at Newton Falls 48
New Stoker Drive 48
Present and Future Trend in the Pulping of Southern Woods 49
Mechanical Fluffer 53
Papermakers' Microscope 54
Current Paper Trade Literature 55
Cost Section **59**
Imports of Paper and Paper Stock 66
New York Market Review **70**
Miscellaneous Markets **72**
Market Quotations **74**

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Want and For Sale Advertisements, 75, 76, 77, 78

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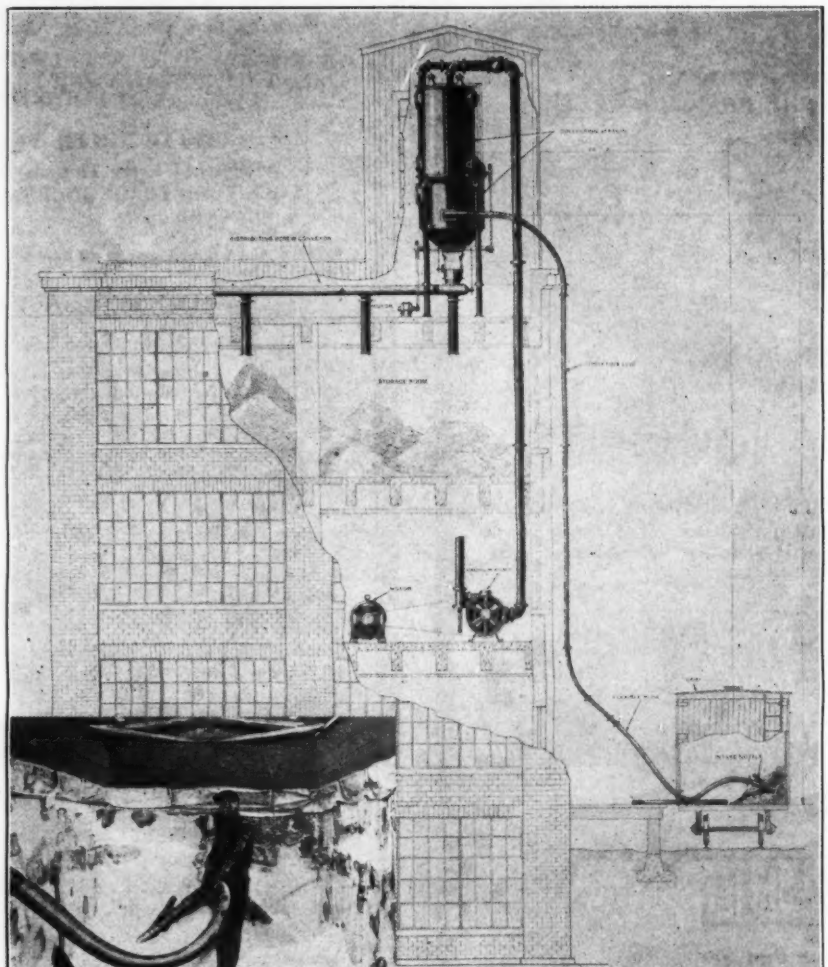

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